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Sectional INDEX

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Who are the Men
YOU CAN COUNT ON-
who stand behind the Mark you can count on?

SEE THIS SPACE NEXT MONTH . . . and you'll see some of the best friends you could ever have . . . 22 of them . . . all factory-trained and thoroughly experienced Veeder-Root Representatives who are at your service . . . to give you expert consultation on any counting problem at any time you want. All you have to do to avail yourself of this expert consulting service is to call the nearest Veeder-Root office . . . in Hartford, Boston, Chicago, Cincinnati, Cleveland, Detroit, Greenville, S. C., New York City, Philadelphia, Pittsburgh, St. Louis, Montreal. Just consult your Classified Telephone Directory.

INCORPORATED

"Counting House of the Textile Industry"

HARTFORD 2, CONN. • GREENVILLE, SO. CAROLINA

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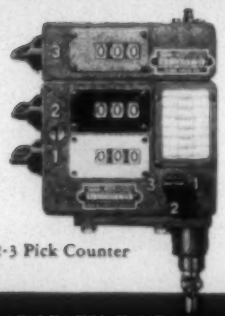
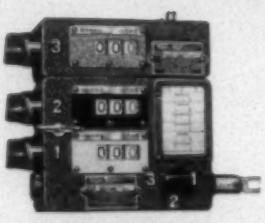
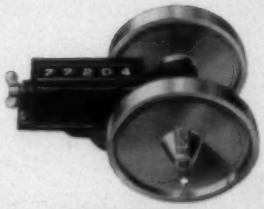


2-3 Pick Counter



2-3 Hank Counter

2-3 Knitting Machine Counter



Double-Wheel Linear Counter

Wood Parts for Draper Looms

● Draper's 150,000 acres of tree-farms supply much of the choice timber used in the manufacture of the wood parts for Draper Looms.

Draper Picker Sticks, for both Draper and Crompton & Knowles looms are made from carefully selected straight grain, close-textured hickory, free from such defects as curls and burls, and of the proper density. The sticks are manufactured on precision machinery — much of special design — to assure uniformity in size.

The various woods used in the fabrication of handrails, lays, binders, breast-beam boards, and other wood parts are selected and processed with equal care.

If you need picker sticks or any other wood parts for your looms, try Draper quality. You will save in the long run.

DRAPER CORPORATION

ATLANTA, GA. HOPEDALE, MASS. SPARTANBURG, S. C.

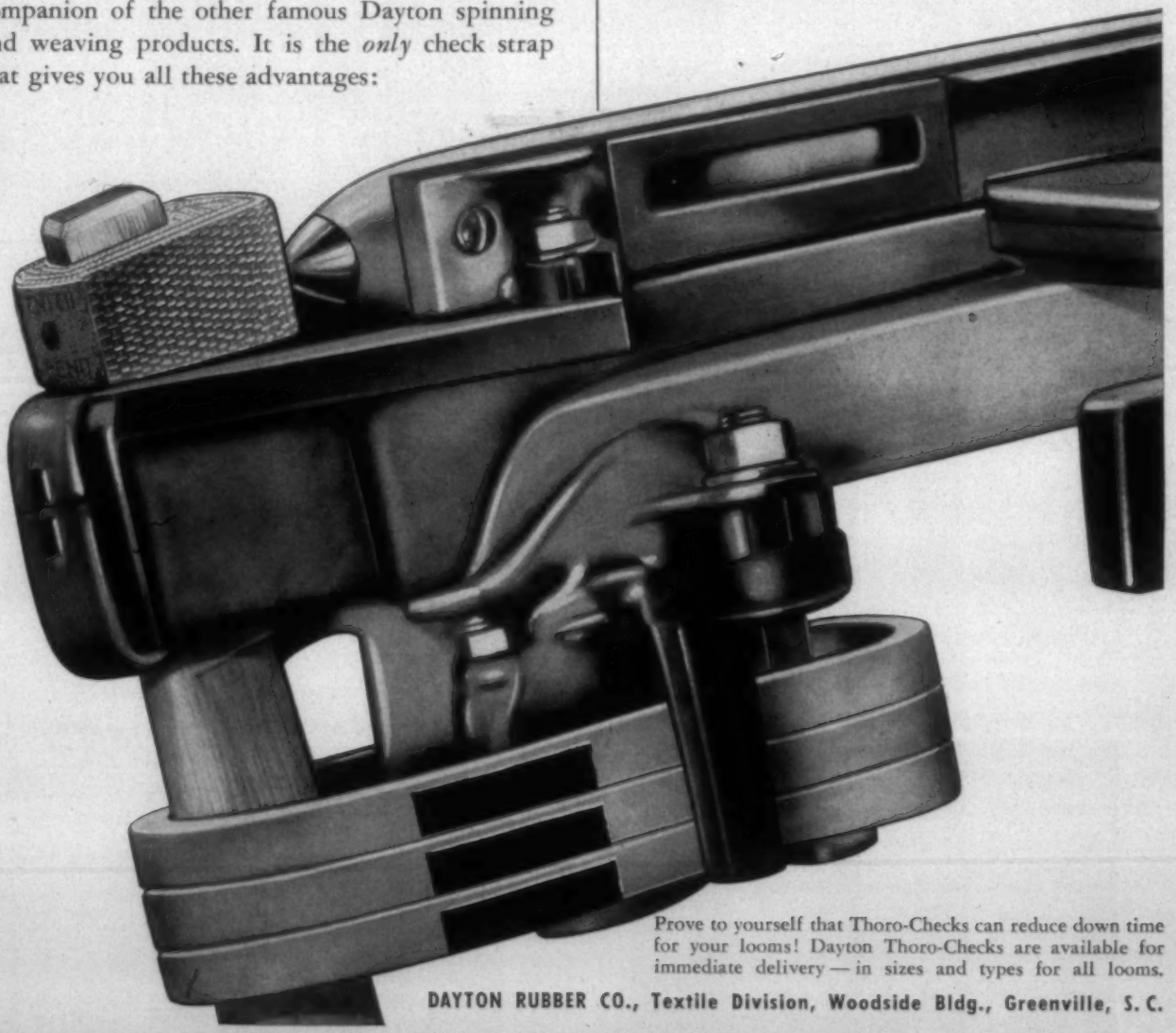
Here it is—

THE GREAT NEW DAYTON THORO-CHECK

It's today's biggest news in weave rooms—a completely *new* check strap, with all the long-life features you'd expect from the makers of the famous Dayco Cot . . . Dayco Long Draft Apron . . . Dayton Thorobred Pickers . . . Thorobred Lug Straps! Scientifically designed to provide properly cushioned snubbing action, the Dayton Thoro-Check gives maximum protection to shuttle, binder, picker, and picker stick. How does it *wear?* Actual weave room use shows it outlasts other check straps by 25% to 50%!

Yes, the new Dayton Thoro-Check is a worthy companion of the other famous Dayton spinning and weaving products. It is the *only* check strap that gives you all these advantages:

- ***Gives greater picker and shuttle life***
- ***Protects binder and picker stick***
- ***Outlasts other check straps by 25% to 50%***
- ***Rubberized fabric construction — no elongation***
- ***Smoother checking — carefree operation***
- ***Unaffected by temperature or humidity***
- ***Individual or multiple replacement***
- ***Famous Dayton precision construction***
- ***Proved by more than a year of weave room use***

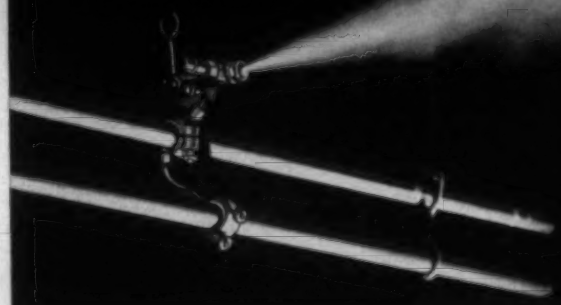


Prove to yourself that Thoro-Checks can reduce down time for your looms! Dayton Thoro-Checks are available for immediate delivery — in sizes and types for all looms.

DAYTON RUBBER CO., Textile Division, Woodside Bldg., Greenville, S. C.

Dayton Rubber

NEW! SIMPLER IN DESIGN!



The *IMPROVED* Automatically Self-Cleaning AMCO Atomizer, No. 6

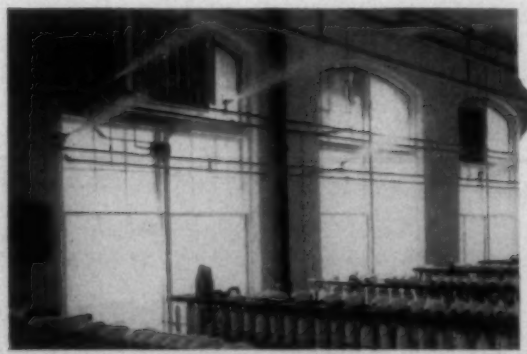
AMCO No. 6 atomizer retains all the time-tested features of the popular No. 5 unit . . . plus additional features which assure improved spray quality. Its better performance and ease of maintenance make this automatically self-cleaning atomizer superior for new installations and replacements.

CONSTRUCTION AMCO No. 6 is made from metals which have proved their resistance to erosion, corrosion and mechanical wear. More rugged construction, fewer parts and greater simplicity in design make servicing easy.

SPRAY A micro-atomizing nozzle produces an exceptionally fine, smoke-like spray which is projected a great distance, intimately mixing with room air. Discharge is adjustable. An entirely new valve action insures positive water shut-off.

SELF-CLEANING The air and water nozzles are automatically self-cleaned each time the compressed air is shut off manually or by humidity control.

AMCO No. 6 conforms to standard specifications. It is interchangeable with AMCO atomizers Nos. 5 and 4 where at least 20 pounds per square inch is maintained on air lines and the water lines are under gravity control.



CHECK THESE PRACTICAL BENEFITS

— yours with

AMCO CONTROLLED HUMIDIFICATION

- Regain maintained—Normal moisture content of fibers retained during processing and in finished fabrics.
- Constant weight of yarn and cloth per given length made possible—yarn counts kept more even.
- Output increased—Static electricity eliminated as a problem. Closer machine adjustments and higher speeds maintained. Materials kept in best condition for processing.
- Product quality improved—Fewer imperfections from pieced-up ends. Stronger, smoother and more uniform fabrics. Yarn and cloth sheen improved.
- Waste reduced—More yarn produced from each pound of raw material. Less broken fibers, dust and fly in product.

AMCO

HUMIDIFICATION • COOLING • AIR CONDITIONING

AMERICAN MOISTENING COMPANY, PROVIDENCE, R. I. • ATLANTA • BOSTON • CAMDEN • CHARLOTTE • AFFILIATED WITH GRINNELL COMPANY, INC.

"The Odds are 4 to 1

You Can Cut Your Painting Costs With The On-The-Wall Test"

Figure it this way. Labor represents 80% of the average cost of maintenance painting . . . four times the cost of the paint. So if you're looking for savings . . . real savings . . . make this simple test.

Take two equal wall areas in your building and let your painter paint one with Barreled Sunlight and the other with any other good brand of paint . . . both paints thinned according to directions, of course. Clock the time it takes to paint each area and see how much faster and better your painter can work with Barreled Sunlight. Project the time he saves with Barreled Sunlight into terms of a complete painting job, and you'll realize that you can enjoy the long-lasting quality of famous Barreled Sunlight *and still save money on your painting costs.*

Yes, you may pay a little more per gallon for Barreled Sunlight but it will go farther and faster on the wall. It will give you a better-looking, longer-lasting paint job *for less money than any other paint on the market.* Let our representative help you make this money-saving test. Write and he'll call.

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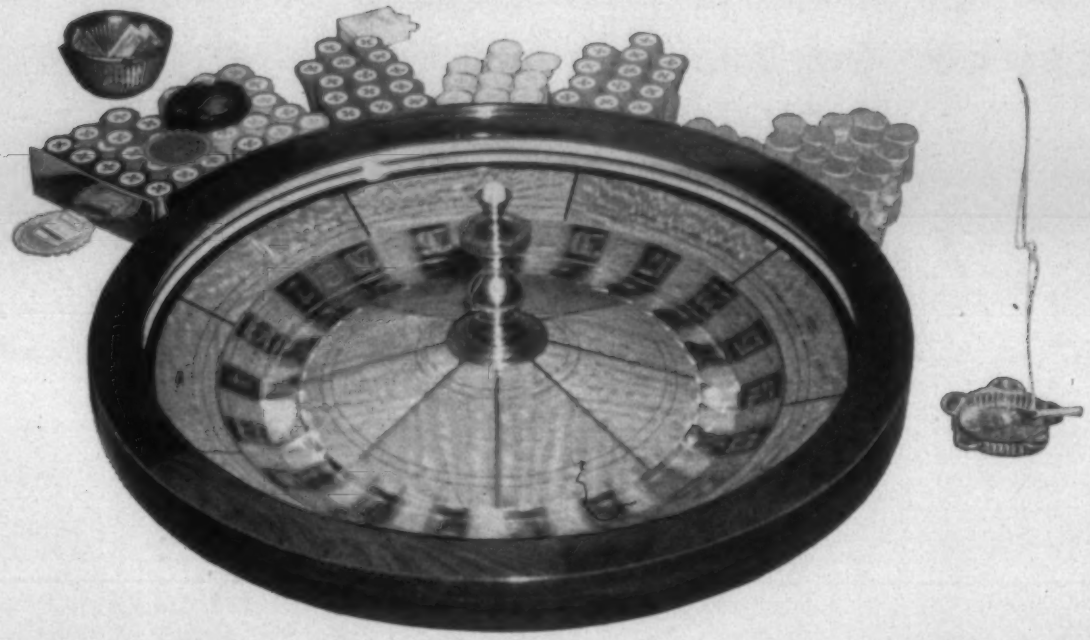
Barreled Sunlight *Paints*

In whitest white or clean, clear, wanted colors, there's a Barreled Sunlight Paint for every job

IT ALWAYS COSTS MORE NOT TO PAINT!

For over half a century the symbol of quality and dependability among paint buyers for leading industrial, institutional and commercial buildings

You Can't Depend on these Numbers . . .



But You CAN Depend on *Ashworth's* 4-6-7

4 FACTORIES (Fall River, Worcester, Philadelphia, Greenville) assure you of an uninterrupted supply of card clothing. Decentralized and strategically located, these factories can "pinch hit" for each other in emergencies.

6 REPAIR SHOPS (Fall River, Philadelphia, Charlotte, Greenville, Atlanta, Dallas (Textile Supply Co.)) assure convenient, economical and prompt reclothing and repair service.

7 DISTRIBUTING POINTS (Fall River, Worcester, Philadelphia, Charlotte, Greenville, Atlanta, Dallas (Textile Supply Co.)) make Ashworth products and consultation service more readily available.

AND DON'T FORGET "90". More than 90 years of experience in cards and card clothing — your guide to a consistently high standard of quality in manufacture and efficiency in performance.

Buy Ashworth Card Clothing and get DEPENDABILITY.

CARD CLOTHING . . .
For cotton, wool, worsted, silk, rayon and asbestos cards and for all types of napping machinery. Brusher clothing and card clothing for special purposes. Lickerin wire and garnet wire. Sole distributors for Platt's metallic wire. Lickerins and top flats reclothed.

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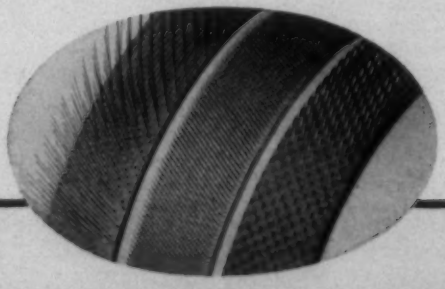
American Card Clothing Co. (Woolen Division)
FALL RIVER • WORCESTER • PHILADELPHIA • CHARLOTTE • GREENVILLE
ATLANTA • DALLAS (Textile Supply Co.)



Ashworth **CARD CLOTHING**

Onyx is ready to help you solve lubrication, finishing and dyeing problems that the new blends ahead in the textile industry are setting up.

Dacron, Vicara, Orlon, Dynel—to mention just a few of the new synthetics—are calling for the utmost in ingenuity as well as experience when they are blended with other fibers.

We don't know it all! But we offer you knowledge, experience and patience in solving finishing and dyeing problems. Onyx helped work out the answers to lubrication of glass fibers when the idea was new. We have just finished work on certain Dynel blends to the satisfaction of the maker and quite a few users.

Please call us in on *your* new blends!

onyx CHEMICALS FOR DYEING • FINISHING • PRINTING

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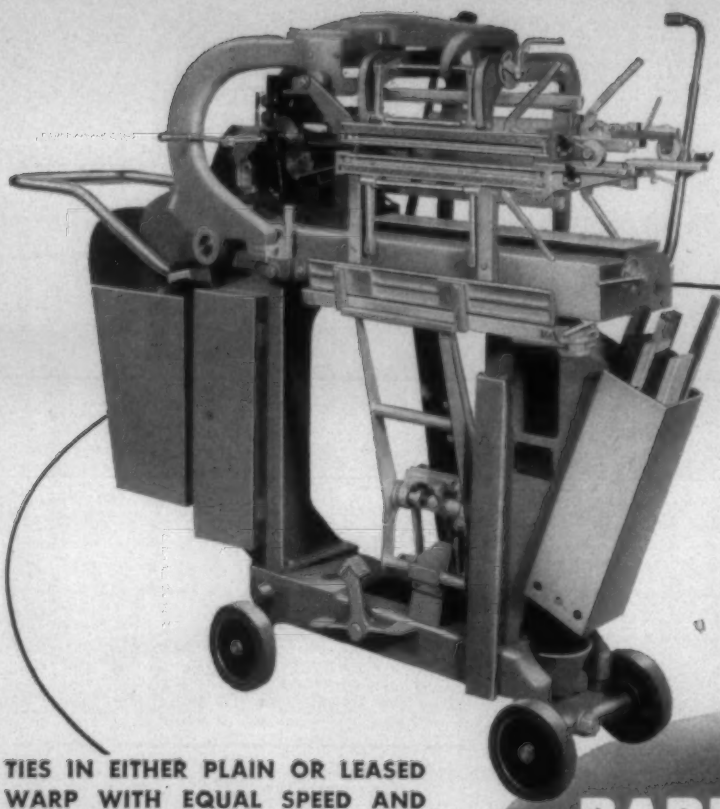
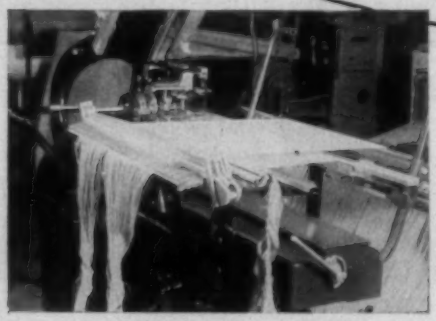


BARBER COLMAN

Reduce Costs!
Increase Production!
Improve Products!

TIES IN EITHER PLAIN OR LEASED WARP WITH EQUAL SPEED AND EFFICIENCY



Model "LL" machine set up for tying in a plain cotton warp.

The same machine as above, now set up for a leased cotton warp.

BARBER-COLMAN *Portable* WARP TYING MACHINE

A Barber-Colman PORTABLE Warp Tying Machine can be a *very profitable* investment for you. This machine offers a fast and accurate means for tying-in new warp *at the loom.* It can be handled in confined and hard-to-reach places and in loom alleys as narrow as 12". Overall production capacity averages 3500 to 4500 ends per hour, higher on high sley warps. Models are available to handle cotton, wool, worsted, silk, or synthetics (including monofilaments) and plain warps or leased warps or both. Tying is accurate and uniform and so much more efficient than common hand methods that the machine will pay for itself quickly in cost savings *even when not in constant use.*

AUTOMATIC SPOOLERS • SUPER-SPEED WARPERS • WARP TYING MACHINES • DRAWING-IN MACHINES

BARBER-COLMAN COMPANY

ROCKFORD • ILLINOIS • U. S. A.

FRAMINGHAM, MASS., U. S. A. GREENVILLE, S. C., U. S. A. MANCHESTER, ENGLAND MUNICH, GERMANY

For Vat Dyeing
For Vat Printing
Cotton and Rayon

CARBANTHRENE RED FBB

(DOUBLE PASTE)

Produces clear, bright shades with excellent all-around fastness. An excellent value recommended for upholstery, drapes and other launderable articles.

Write, wire or phone the nearest National Aniline office for prompt service on this widely-useful vat dye.

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ALLIED CHEMICAL & DYE CORPORATION

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Providence 3, R.I., 15 Westminster St.	DExter 1-3069	Columbus, Ga., Columbus Interstate Bldg.	Columbus 3-1029
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San Francisco 5, Cal., 517 Howard St.	SUtter 1-7907	Chattanooga 2, Tenn., James Building	CHattanooga 6-6347
Portland 9, Ore., 730 West Burnside St.	Beacon 1863	Atlanta 2, Ga., 148 Peachtree St.	CYpress 2621
Chicago 54, Ill., The Merchandise Mart	SUperior 7-3387	New Orleans 16, La., 714 Carondelet Building	Raymond 7229
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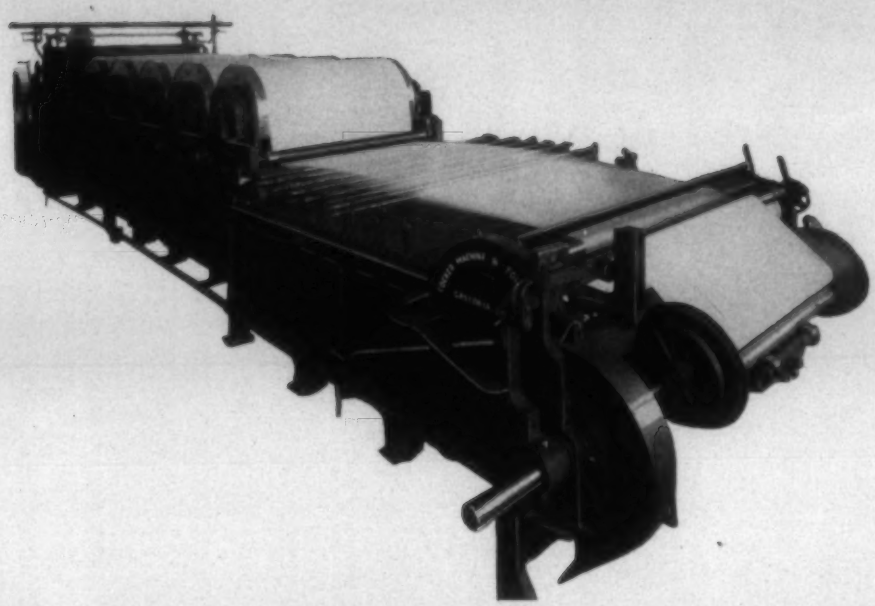


The Cocker 9-Cylinder High Speed Slasher for cotton, spuns, filaments, and other type yarns.

The Most Modern Slasher in America

1200 Pounds

Production

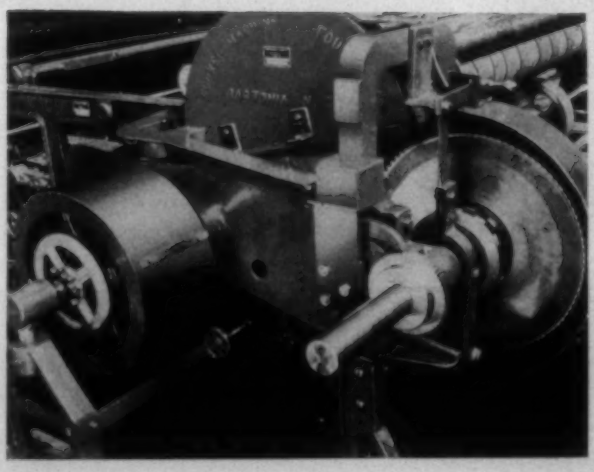
Per Hour

This machine has the new Cocker Friction . . . an exclusive feature which produces hard beams and gives more yards per loom beam.

Another exclusive feature of this slasher is its Differential Friction Compensating Control which permits high speeds without heating of Friction. This is now and has always been the most modern slasher on the market . . . the first to use Rotary Packless Joints, Individual Traps on each Cylinder, Flexible Hose Connections, Stainless Steel Cylinders, Variable Speed DC Drive, and many other features which are now universally used.

It will pay you to investigate the many valuable features of this most modern of all slashers.

The New Cocker Friction

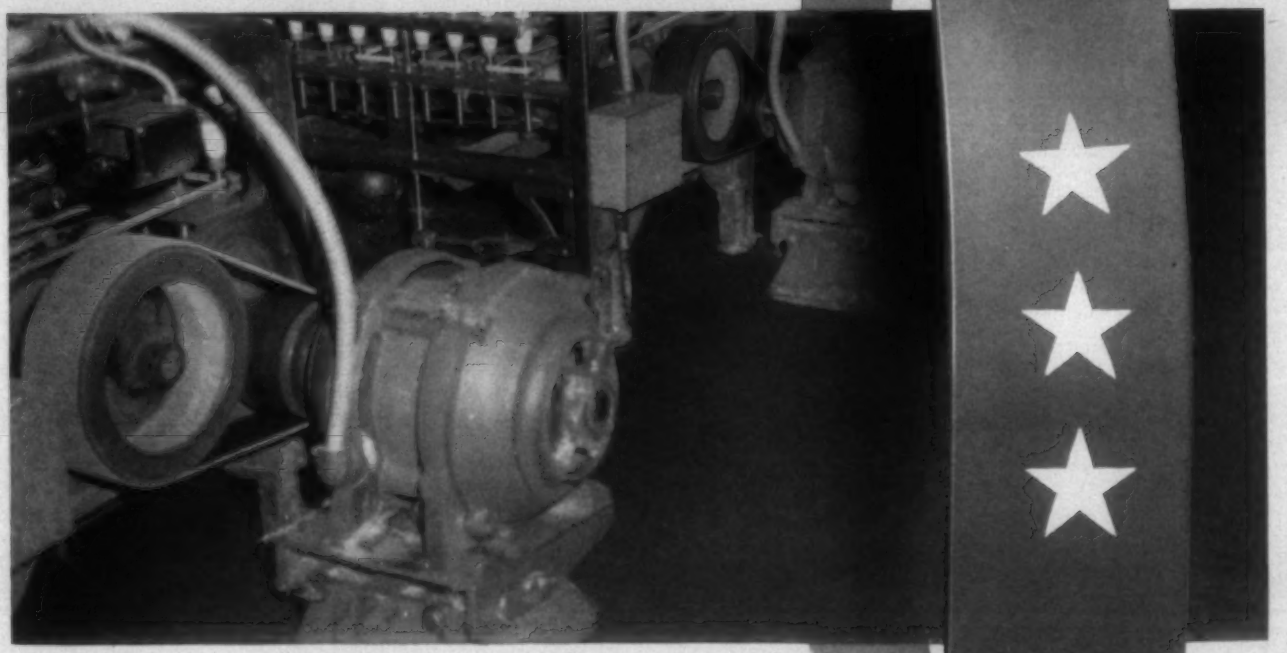


THE LEADER COCKER AROUND THE WORLD

Machine and Foundry Co., Gastonia, N. C.

WORLD'S LARGEST DESIGNERS AND BUILDERS OF COMPLETE WARP PREPARATORY EQUIPMENT

3-Star
LEATHER BELTING



Higher Horsepower Transmission . . .
Insures Maximum Machine Production!

CHARLOTTE 3-STAR Leather Belting is specifically designed to meet the power transmission problems of the textile mill. It possesses higher horsepower capacity, greater frictional qualities and will better absorb shock loads and overloads than ordinary belting. Made only from the center cuts of top quality hides . . . specially tanned, curried and constructed . . . 3-STAR Belting has proved its higher efficiency and longer life in many of America's leading textile mills. A test in *your* mill will prove that it can increase *your* unit production at lower power cost.

CHARLOTTE LEATHER BELTING COMPANY
Charlotte, North Carolina
SINCE 1894

A Typical Double Installation of Burlington's Combination Beam and Package Machine

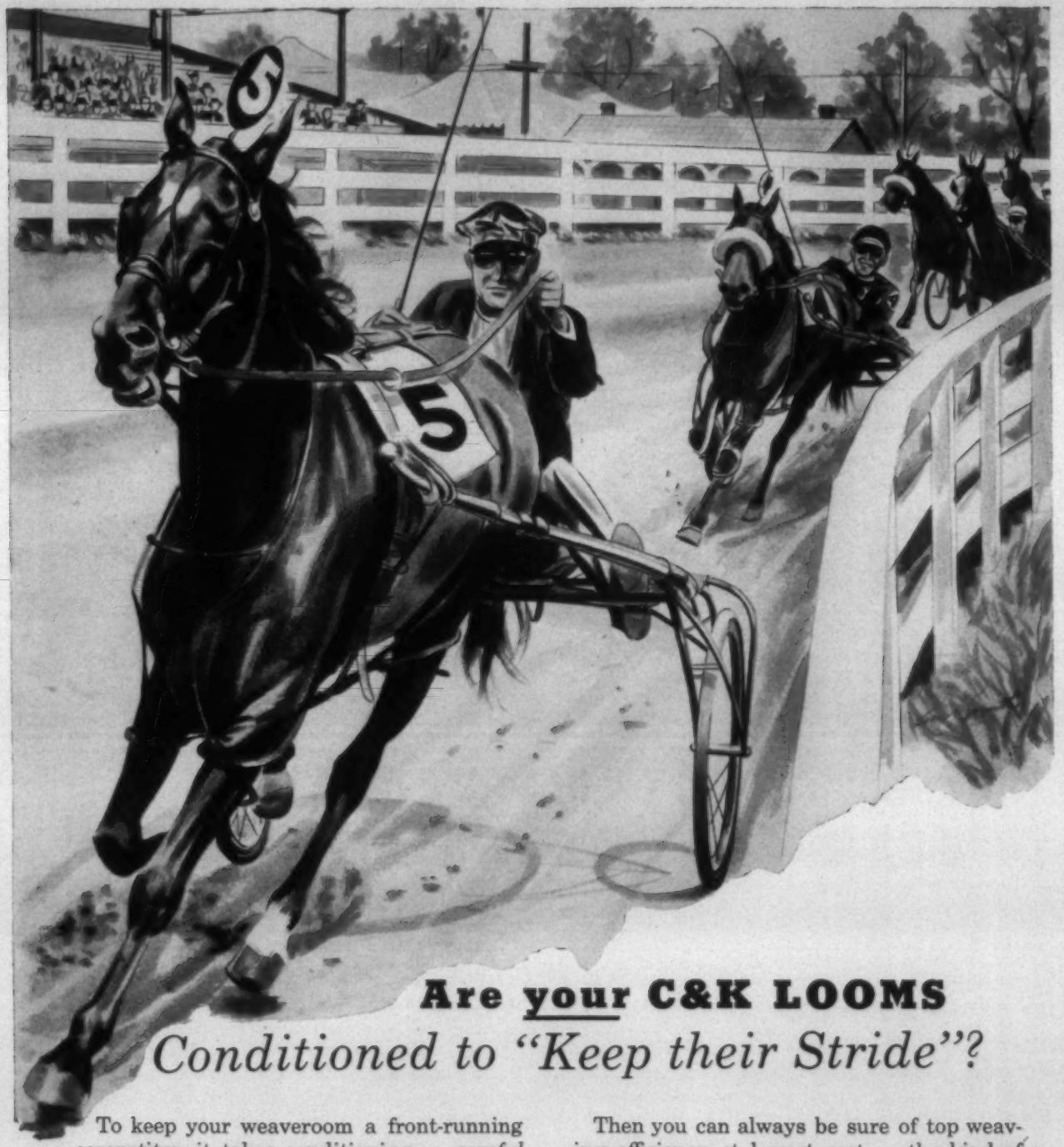
BURLINGTON'S VERSATILE BEAM AND PACKAGE MACHINE

Reduces Beam Channeling

Is troublesome beam channeling increasing the cost of your dyeing process? If so, Burlington Engineering Company can help you eliminate this problem. We will be glad to visit you and explain the unique engineering features contained in Burlington's beam equipment which keeps the blowing of beams at an absolute minimum. You will be amazed to learn how little beam blowing there is with Burlington machines.

Burlington's superior dye house products include becks, package and beam machines, trucks, and other machinery. Burlington Engineering Company also fabricates products of stainless steel for any textile use including springs and tubes tailored to your specifications. Consult us for textile needs.

CALL OR WRITE US FOR FURTHER INFORMATION



Are your C&K LOOMS *Conditioned to "Keep their Stride"?*

To keep your weaveroom a front-running competitor, it takes conditioning . . . *careful* conditioning.

And that means keeping your C&K Looms running up to their original form . . . with C&K Parts.

Then you can always be sure of top weaving efficiency at lowest cost . . . the kind of consistent quality production that will make it a business asset for you to say: "This Fabric is woven in the U. S. A. . . . on Call-Box Looms built by C&K."

CROMPTON & KNOWLES LOOM WORKS, WORCESTER 1, MASS., U. S. A.

Philadelphia, Pa. • Charlotte, N. C. • Allentown, Pa. • Crompton & Knowles Jacquard & Supply Co., Pawtucket, R. I.

Keep Your Looms Running Right

...with C&K LOOM PARTS

This "Invisible Trademark" Stands Back of the Trademarks of the World's Finest Woven Fabrics

look what GOSSETT is now doing!

CONVERTING 10" and 12" COMBER, CARD and DRAWING FRAME COILERS TO 14" or 15" SIZE

After many months of research and testing, GOSSETT technicians solved the problem . . . how to convert 10" and 12" comber, card and drawing frame coilers to a 14" or 15" size and do it at an amazing low cost.

What's more . . . this startling innovation has proven its worth. The first coilers which we converted to a 14" size are now in a number of leading Southern textile mills where substantial increases are being shown.

write or wire for full particulars and estimated cost

B. W. GOSSETT, President — E. C. MASON, Sales Manager
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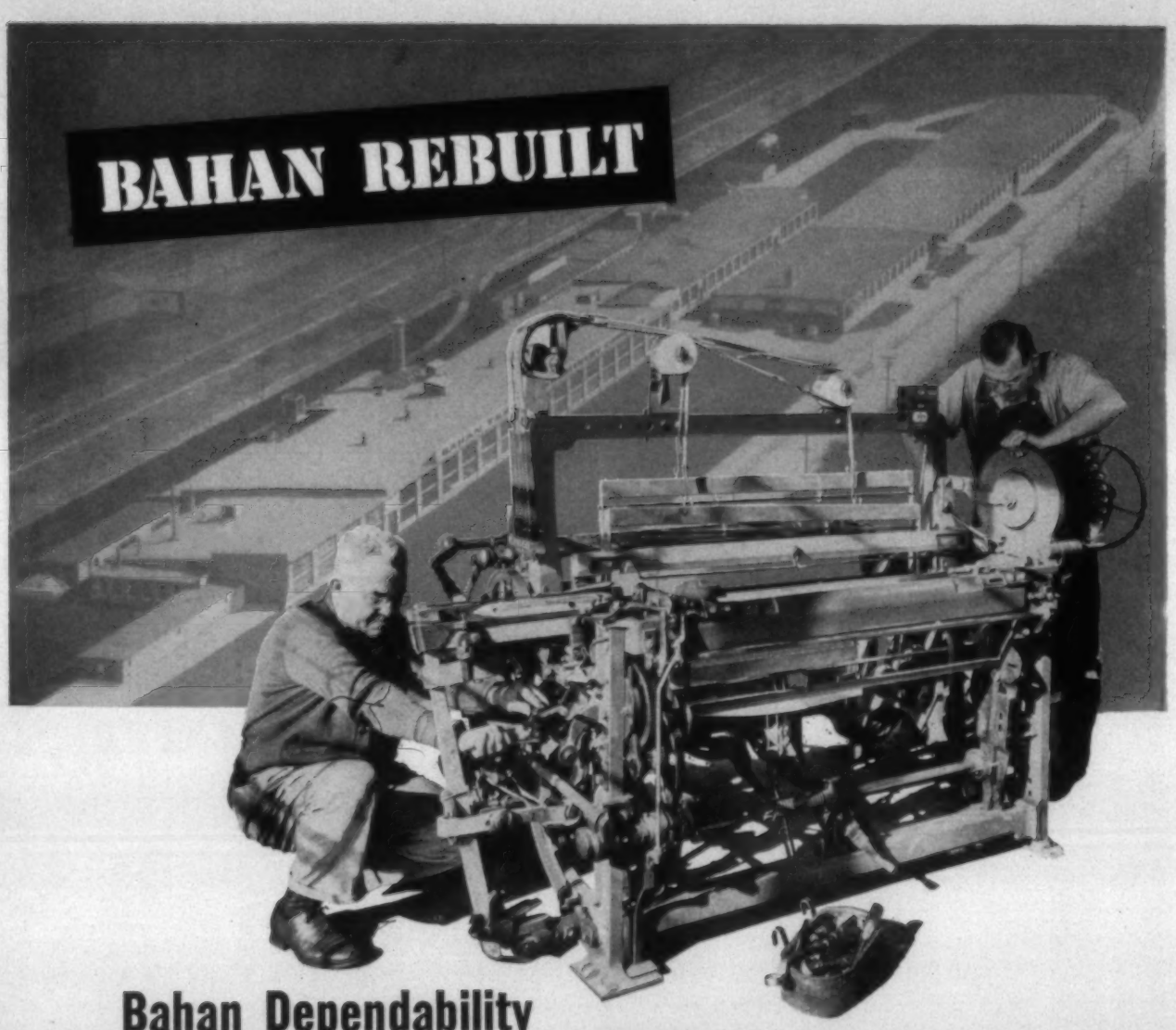
GOSSETT MACHINE WORKS, INC.
GASTONIA, NORTH CAROLINA



Bahan Dependability stands behind every BAHAN REBUILT Loom!

"BAHAN REBUILT" describes the complete renovation and modernization of your old looms by Bahan craftsmen in the plant of Bahan Textile Machinery Company, in Greenville, S. C. Looms so rebuilt—in the plant which for 32 years has manufactured dependable new loom parts—are in every respect the equal of NEW LOOMS!

"Pick-up and Delivery" service by Bahan's own trucks is employed where practical, to reduce cost, to save time, and to assure delivery in good order.

In having Bahan modernize your looms you pay only one profit for labor and materials—and you have the satisfaction of knowing that Bahan dependability stands behind every "BAHAN REBUILT" loom!

We cordially invite your inquiries.

BAHAN TEXTILE MACHINERY CO., Inc.

DESIGNERS AND MANUFACTURERS OF RELIABLE TEXTILE MACHINERY FOR OVER 30 YEARS

Greenville, South Carolina

WATCHING WASHINGTON

[Exclusive and Timely News from the Nation's Capital]

Truman's influence in the new session of Congress is at an all-time low; his leadership has virtually disappeared. Beset by scandals, new investigations, confusion and delay in rearmament, and desertion by some of the strongest party leaders, few, if any, of his proposals will be accepted. Some of his top officials want to retire early this year.

The President is gravely concerned over the political effect on voters of the mounting scandals and revelations of corruption. He is privately searching for a way to clean house without ditching "cronies," or getting rid of part of his White House staff.

Attorney General McGrath, sitting uneasily as a result of the Caudle scandal, can go to Spain as ambassador if he will take it. Point is McGrath refuses to be the "goat," and assume blame for Truman appointees he inherited from Tom Clark. If he goes out it will be because he is pushed out.

Truman's troubles stem from the fact he has never been in close contact with any of the departments and agencies. He has chosen to put others in charge, and leave conduct of things to them, but stand by them rigidly under pressure or attack. Scheming politicians have built a wall around him, and carried on fantastic operations at their leisure.

The scandals are regarded by many House and Senate members as a natural result of big government and vast spending. With sweeping powers over business and economy, and huge appropriations, they see the door opened wide to Pendergastism on a national scale. So long as opportunity exists, they believe, scandals will continue.

Political favors extend up and down the whole range of big government power. Allocations of scarce materials, government contracts and advance grants of money, have turned on the smile of a "crony," an "influence peddler," or a bureaucrat high in power; and as often has turned the question of who was prosecuted and who wasn't.

This is not going to be the short session of Congress that is predicted for an election year. It may continue right up to Christmas, with short recesses for conventions, campaigning, and the election. G.O.P. leaders plan to keep digging into scandals throughout the whole year.

Truman asked for a lot of things in his State of the Union and budget messages which he knows he won't get. There will be no revision in tax laws; the urge for economy will be stronger

than in the last session. Appropriations are likely to be held much lower than in the last session.

Leaders in both Houses know there must be heavy cuts in this year's spending, but so far they have no help from Truman aides. They must contend, too, with a sizable group of spenders in the House who favor confiscation of all personal income over a given bracket, and more and bigger social welfare grants.

Truman's staggering budget of $85 billion in new spending foreshadows more deficits, and the necessity of raising the national debt limit if granted. The basic difficulty is Congress has only a superficial knowledge of how all of the money is spent, and where cuts in waste can be made.

A new expose of the Department of Justice's part in blocking tax fraud prosecutions is ready to be launched by the House Ways and Means Committee. Revenue collectors, U. S. attorneys, judges and political machines will be drawn into it. One angle is that political machines endorsed certain men for judgeships on condition they would go easy in tax fraud cases. Truman has accepted machine endorsements in naming most new federal judges.

Gamblers and racketeers in Senator McCarran's Nevada are about to get a terrible going-over by revenue agents for unreported incomes and unpaid taxes. McCarran has been a prickly thistle to Truman and the Fair Dealers in his drive on Communists in government. Aim is to build a hot fire behind McCarran at home.

Mobilizer Wilson has suggested pointedly to Economic Adviser Keyserling that he keep out of price-wage stabilization problems. Wilson is convinced the Socialist-leaning New Deal Old Guard is seeking to undermine his agency and set up permanent planned economic controls in keeping with World War II. Keyserling has been very critical of Wilson.

Wilson's contention is that price and wage controls are not effective unless fiscal policies also restrain the demand for goods and services. If demand is not restrained, the controls do not work, with removal only leading to greater inflation. Truman has put sole emphasis on price and wage controls.

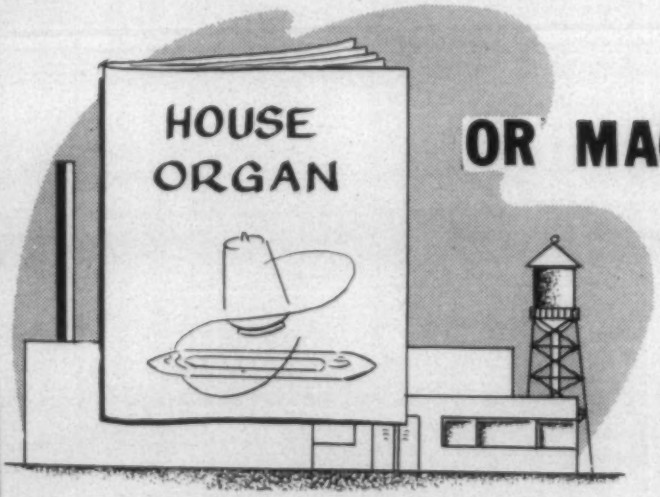
Union bosses have sought to flank wage controls by higher wage demands, expecting approval by the Wage Stabilization Board. As price controls have moved upward, the union leaders have instantly seized on them as a basis for new wage increases. With a wage board in existence, Wilson has not been able to control the climbing spiral.

Philip Murray is pushing a new plan of "co-determination" for industry, taken from objectives of German labor unions. He would put labor spokesmen on each board of directors equal in number to stockholder directors, with a full voice in all policy making.

Murray's innovation is not called Socialism, but an admixture of everything from Marx to Mussolini. Details of the proposal

MENUS

MEMOS



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ROANOKE • BRISTOL • WILMINGTON • MACON • KNOXVILLE • RALEIGH

1926 *Dillard Paper Company Serves the South* 1952

are covered in a resolution adopted by the C.I.O. national convention, and urging member unions to put it into effect.

Truman aides have decided to go the whole length in using defense orders to break down the South's employment practices, and open wide the gate to C.I.O. and A.F.L. As many cases as possible will be brought before the Wage Stabilization Board for review, and decided in keeping with the board's precedents.

In the Illinois mine disaster John L. Lewis believes he has the means of forcing 40 cents a ton from mine owners for pensions. The levy is now 30 cents.

The military draft, under the new schedule, will take from 50 to 60 thousand men a month this year. Calling of 19-year-olds will start in early Fall. The Defense Department is looking for loopholes in occupational and student deferments, and debating drafting fathers with one child.

U. S. taxpayers are being "milked" alike by Russia and anti-Communist countries in Europe, said Senator Ellender (D., La.). Returning from a study abroad, he said "the worst of all scandals" is in foreign aid. Recipient nations are giving little or nothing of their own, and much of the money filters right into Russia. Attitude of some countries, he said, is "organized blackmail."

Rumors are that Britain is about to break out in a rash of scandals similar to the Truman epidemic. Conservatives are digging into doings of the former Labor Government. Gross misdoings are understood to be revealed already in nationalization of industries, food rationing, and socialized medical supplies.

Eisenhower pulled away from the Truman scandals as far as possible in putting forward his candidacy. Administration forces had been hopeful he would be their own candidate; Truman had been quite sympathetic to him as a candidate.

Truman is expected very soon to say that for reasons of "health" he will not seek another term. He will give his age, 68, as one reason, and also that his doctors urge that he decline another term.

MacArthur is deemed the most likely "dark horse" if Taft fails to win the G.O.P. nomination. While the arena is crowded with candidates, only Taft and MacArthur are being named in the same breath by members of Congress who have returned from communing with the home folks.

Efforts will be made in this session to widen the Social Security program with broader coverage and larger benefits. It is proposed to add 11 million more people to coverage, with cash benefits for total or temporary disability, and to include maternity benefits.

There will be much talk on Truman's "civil rights" proposals, including F.E.P.C., in this session. Legislative action is not probable, nor are grants of money for a special Truman agency.

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APPLICATION	NAME	COTTON	RAYON	WOOL	NYLON	SILK	LINEN	CHEMICAL NATURE
ANTI-SLIP	WEAVE-LOK*		X		X			water-soluble processed natural resin
ANTI-SLIP	FORMASET* HG		X	X	X			inorganic polymer semi-durable
COATING								
NON VOLATILE	PLASTISOL	TEXTILES, PAPER						vinyl resin dispersions
VOLATILE	ORGANOSOL	TEXTILES, PAPER						vinyl resin dispersions
COLOR FIXATIVE	WARCOFIX*	X	X	X	X	X	X	quarternaryammonium compound
COLORS, DISPERSED	SUNTONE*	VINYL						pigments dispersed in resinous and chemical plasticizers
COLORS, PAD DYEING	SUNTONE*	X	X	X	X	X	X	dispersed pigments and resinous binders
COLORS, PRINTING	SUNTONE*	X	X	X	X	X	X	dispersed pigments and resinous binders
COLORS, PRINTING	SUNTONE*	PLASTICS						dispersed pigments and resinous binders
FINISHES								
BODYING AGENTS	SETOLE* AF	X						aqueous dispersions of thermo-setting resins
CRUSH RESISTANT	FORMASET* SN		X					methylolurea type thermo-setting resin
DULLER	ANTILUSTEROLE*		X		X			aqueous dispersion of inorganic pigments
FIRE RETARDANT	WARCONYL* A	X	X					blend of inorganic salts
GLAZING (DURABLE)	FORMASET* 10-D	X						dimethylurea-ether polymer
GLAZING (DURABLE)	FORMASET* SN		X					methylolurea type thermo-setting resin
MILDEW PROOFING	KUPRATE*	X	X	X	X	X	X	copper 8 quinolinolate dispersion
MILDEW PROOFING	G-4 EMULSION-20	X	X	X	X	X	X	emulsion containing 20% G-4. Compatible with emulsion-type water repellents.
RIBBON FINISH	SETOLE* D EXTRA		X					water-soluble alkyd resin
SEWABILITY FINISH	WARCO* A 221	X						non-ionic emulsion
SHRINK RESISTANT	FORMASET* SR	X	X					ketone aldehyde type thermo-setting resin
SHRINK RESISTANT	FORMASET* SN		X					methylolurea type thermo-setting resin
SHRINK RESISTANT	FORMASET* 10-D		X					partially polymerized urea-formaldehyde type resin
SHRINK RESISTANT	FORMASET* C	X	X	X	X		X	controlled formalizer of fibers—highly wash resistant
SOFTENERS								
ANIONIC	APPRETOLE*	X	X				X	alkyl amide dispersion
CATIONIC	APPRAMINE*	X	X		X		X	substituted fatty amide
HEAVY-BODIED	TORRIDEX*	X	X					sulfonated tallow
OXIDATION RESISTANT	WARCOLENE* 171	X	X				X	sulfated fatty acid ester
WATER REPELLENT DURABLE	NORANE* R	X	X					chloromethylated quaternary ammonium compound
WATER REPELLENT DURABLE	NORANE* W			X	X			wax emulsion plus metal salt complex
WATER REPELLENT RENEWABLE	IMPREGNOLE*	X	X	X	X	X	X	wax emulsion with polyvolent salts
GAS FADING INHIBITOR	WARCO* GFI		X					high molecular weight amino compound
GAS FADING INHIBITOR	WARCO* GND		X					mixed organic amines (non-durable type)
KIER BOILING COMPOUNDS	KIEROLE*	X	X				X	sulfonated fatty acids
KIER BOILING COMPOUNDS	COLOROLE*	X	X				X	sulfonated fatty acids
LUBRICANT (YARN, FABRIC)	WARCOLENE*	X						solubilized oil
LUBRICANT	WARCO* A 221	X						non-ionic emulsion
PENETRANTS—REGULAR	WARCOSOL*	X						sodium alkylnapthalenesulfonate
PENETRANTS—NON-FOAMING	WARCOSOL* NF	X	X	X				blend of organic esters
PENETRANTS—MERCERIZING	EUMERCIN*	X						cresylic and non-cresylic types
PIGMENT PRINT BINDERS	SUNTONE* CLEARS	X	X					emulsified resinous compounds
PIGMENT PRINT BINDERS	FORMASET* 20	X	X					partially polymerized urea-formaldehyde resin
TAR AND GREASE REMOVER	LANOLE*	X	X	X	X			detergent solution in organic solvent
SYNTHETIC DETERGENT	SULFANOLE* KB	X	X	X	X	X	X	sodium alkylarylsulfonate
SYNTHETIC DETERGENT	SULFANOLE* CP	X	X	X	X	X	X	sulfated fatty amide
SYNTHETIC DETERGENT	SULFANOLE* S GEL Conc.	X	X	X	X	X	X	sulfonated fatty amide
SYNTHETIC DETERGENT	SULFANOLE* AN	X	X	X	X	X	X	fatty acid amine condensate
WETTING AND REWETTING	WARCOSAN*B Conc.	X	X					sodium alkyl ester sulfate
WOOL SCOURING	LANOLE* B		X	X				stabilized organic solvent soap compound

*Trade Mark Reg.

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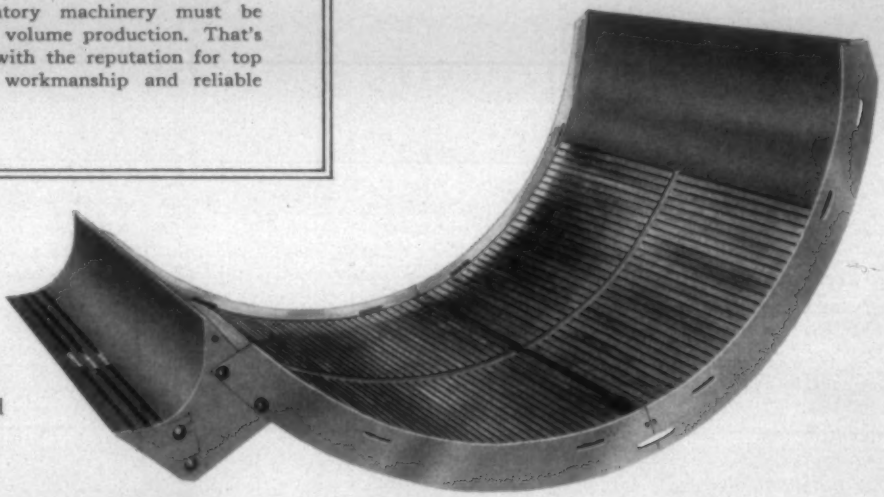
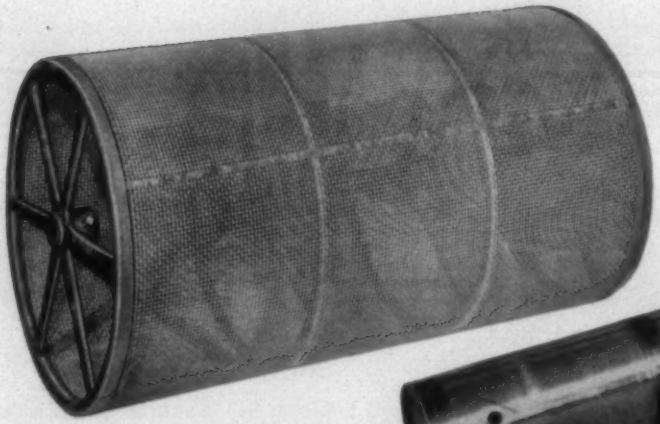


Standard type rib or perforated Card Screens are precision built on special jigs. Every screen is inspected and double checked for accuracy and tolerance.



Picker, Condenser and Waste Machine Screens of maximum strength and durability are constructed of the best materials available.

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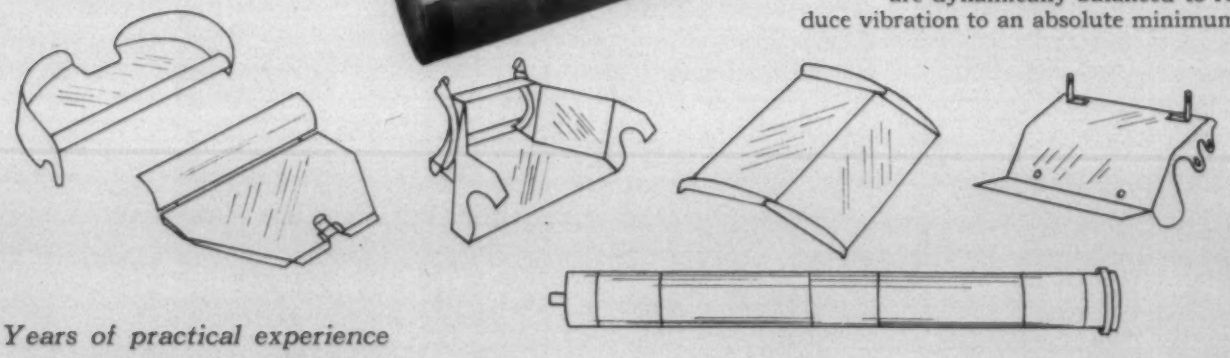

Years of practical experience —the finest of raw materials —and precision machinery in the hands of skilled workmen go into every product.

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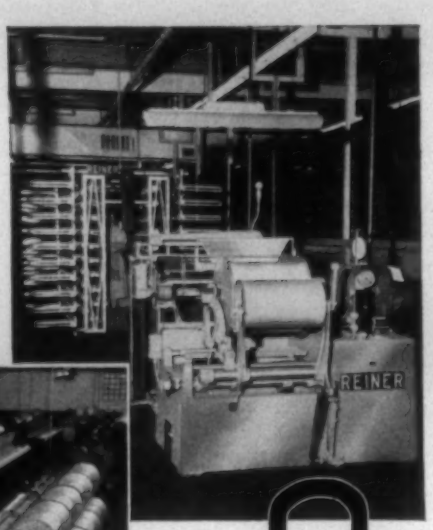
GASTONIA, NORTH CAROLINA
A SHEET METAL WORKS SERVING TEXTILE MILLS

Tricot at its best!



(Photos Courtesy Holly Knit, Inc.)

Available: 2 and 3-bar machines, with 2-bar machines convertible to 3-bar use and vice-versa—long needles for coarse gauge fabrics—knitting widths 168" and 84" — all gauges — automatic oil feed lines throughout — sturdy, rugged construction—pattern wheel or chain link drive—positive cloth take-up—and other features.

Another success story

Good planning, good management and an all-Reiner warp knit installation are the combination for the success of Holly Knit, Inc., makers of fine tricot cloth. We are proud to state that only Reiner Tricot Machines, Warpers and Creels were selected by this progressive and modern mill and that they have proved their worth and excellence in 'round the clock operation.

Those interested in the manufacture of fine tricot cloth owe it to themselves to find out more about Reiner Machines. Richly illustrated catalogs are available upon request. Remember, Reiner manufactures a fully inter-related line of warp knit equipment, from cone to knitted fabric.

The newest Reiner Tricot Machine assures speed with safety; an ingenious but easy to handle beam let-off and other mechanical devices add quality to quantity. In short, when you are operating Reiner Tricot Machines, you are assured of Tricot at its Best!

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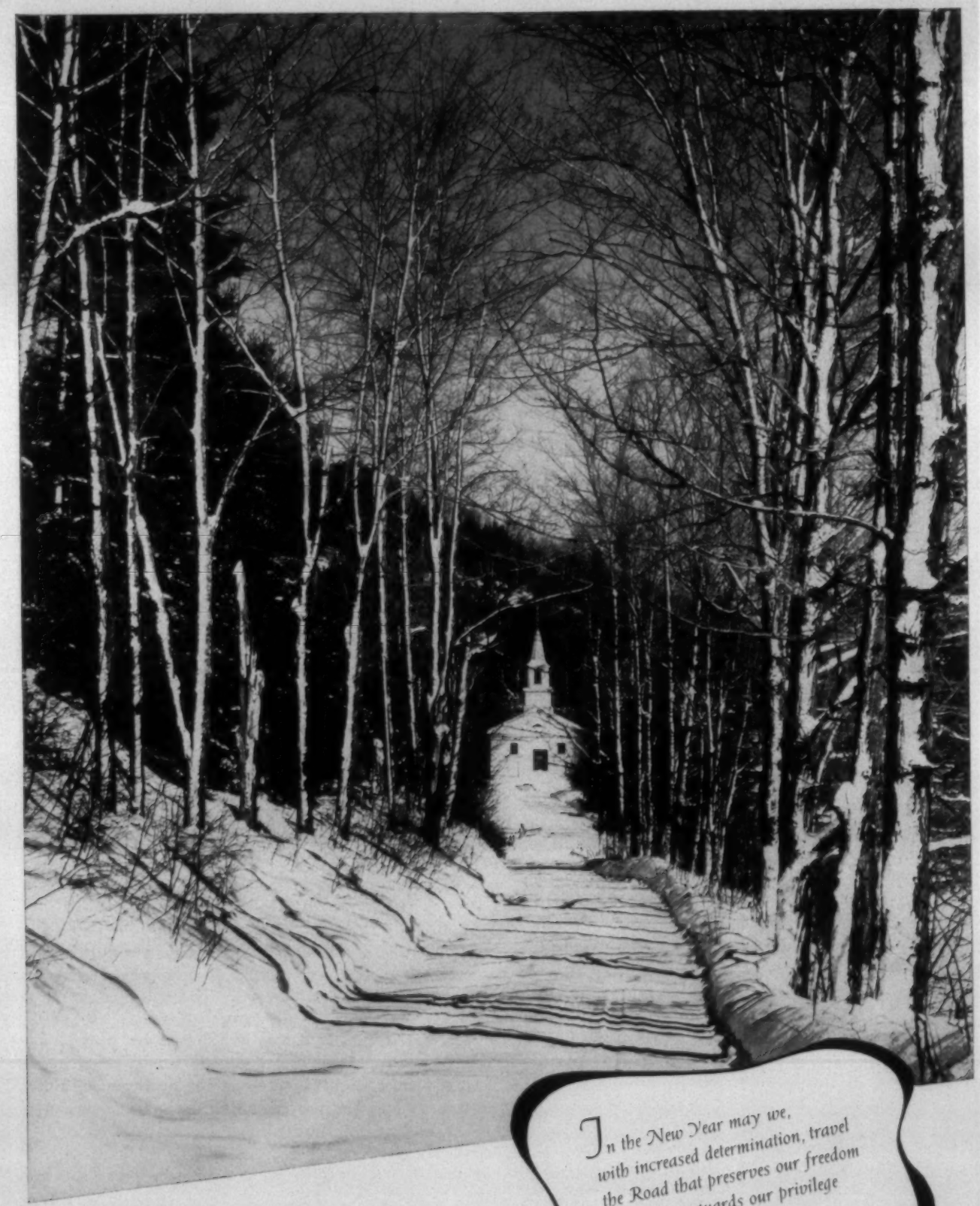

In the New Year may we,
with increased determination, travel
the Road that preserves our freedom
of worship, guards our privilege
of free speech and guarantees
our economic freedom.

HOWARD BROS. MFG. CO. WORCESTER 8, MASS.

Harry C. Bdey

President

What's the One and Only Way to

Make Direct Dyes

Triple-Fast?

Only with CUPROFIX colors and after-treatment can you give direct-dyed fabrics satisfactory fastness to *sunlight* as well as *washing* and *perspiration.*

Particularly on dark shades, CUPROFIX gives cotton, rayon and blends a degree of *wet* fastness that compares favorably with more expensive vat dyes . . . and a much greater degree of *light* fastness than any other after-treatment.

Since CUPROFIX colors can challenge vat-dyed results . . . and they cost so little more than direct dyes—isn't it *smart business* to after-treat? And since CUPROFIX alone gives direct-dyed colors the extra saleability of *triple* fastness—isn't it *smart buying* to use CUPROFIX?

Label Resin-Treated Garments "WASHABLE"
Adding CUPROFIX to the resin bath increases fastness to washing sufficiently to permit labeling garments "washable" instead of just "dry cleanable". It also:

materially increases efficiency of the usual resin treatment

eliminates in many cases the effect of resin on light fastness.

Get acquainted with CUPROFIX now—write us for Booklet U. S. 125. SANDOZ CHEMICAL WORKS, INC., 61 Van Dam Street, New York 13, N. Y.

Fast to Light · Wash · Perspiration
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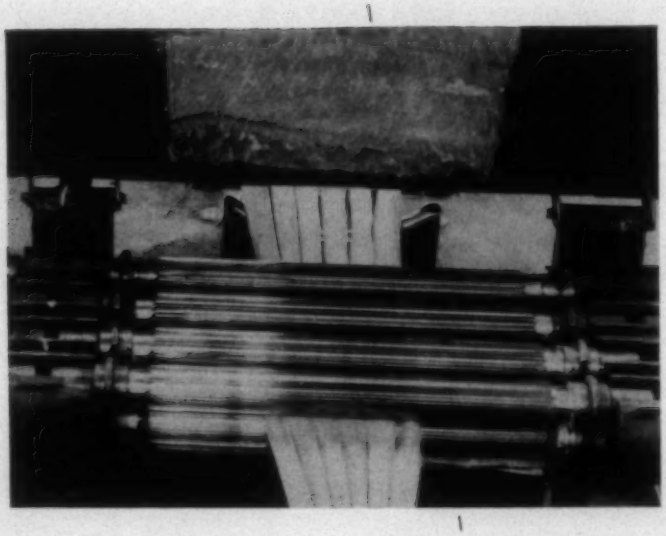
SANDOZ *thinks ahead with textiles*

SANDOZ

Ideal High Speed Ball Bearing Drawing Rolls*

Cost Less to Buy
Cost Less to Run
...and Make Better Yarn



Cost less to buy

Actual production figures from many mills show that two Ideal Drawing Roll units outproduce three of any other make. In many cases they produce more than four of the old kind. You save money when you replace your worn out drawing heads with Ideals, because you need fewer of them.

Cost less to run

Because of Ideal's unusual construction the rolls are automatically aligned and synchronized at all times and require practically no attention. Actual production figures show an average reduction of over 58% in up-keep . . . and over 43% saving in power.

...and Make Better Yarn

The perfect alignment and synchronization of Ideal Drawing Rolls prevents cutting, mauling, or bruising of fibres and eliminates thick and thin places in the roving. Roving drawn on Ideal units shows 26.9% less variation and 7.4% greater breaking strength. This improved drawing results in fewer ends down on fly and spinning frames.

Ideal High Speed Ball Bearing Drawing Rolls will cut your costs and produce better yarn. Write for full information today.

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Bessemer City, N. C.

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A A P

gives you **all around fastness**

Amanthrene* BROWN RRD

A VAT COLOR in paste or double powder form

BETTER FASTNESS Fast to washing, chlorine or peroxide bleaching, soda boiling, sunlight, perspiration, dry cleaning.

BETTER PRINTING Unsurpassed for *printing* of cotton and rayon sports wear, draperies, slipcover fabrics . . . affording the advantages of a homogeneous, *non-drying* paste, or a finely divided dispersible powder.

FINER SHADES Gives a full chocolate shade of brown and, in combinations, meets your precise requirements in blotch work and finer engravings.

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"... helping to keep the business cycle on an even keel ..."

HARRY B. HIGGINS
President, Pittsburgh Plate Glass Company

"The employees of Pittsburgh Plate Glass Company since 1946, have purchased $9,488,510 in United States Savings Bonds through the Payroll Savings Plan. This accumulation of assets will be of inestimable value in helping to keep the business cycle on an even keel by maintaining purchasing power for the future."

Payroll Savings—the plan that protects—pays the employer *triple* benefits:

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- as enrollment on the plan goes to 60%, 70% employee participation, productivity increases, absenteeism decreases and accident records go down.
- and as Mr. Higgins points out, the systematic purchase of Defense Bonds through the Payroll Savings Plan is building a tremendous reserve of purchasing power.

Let's point up the third employer benefit with a few figures:

- On September 30, 1951, individuals held Series E Bonds totaling $34.6 Billion—more than $4.6 greater than on V-J Day.
- During the five calendar years (1946-1950) Defense Bonds sales provided:

—*Cash* to retire $3 Billion A-D Savings Bonds (maturing Series).

—*Cash* to meet $24 Billion redemptions of E, F and G Bonds.

—$6 Billion (after providing cash for the payments enumerated above) that the U.S. Treasury could use to pay off bank-held debt.

And the figures are getting better every day—between January 1, 1951 and November 1, 1951, 1,200,000 employed men and women joined the Payroll Savings Plan.

If the employee participation on your Payroll Savings Plan is less than 60%, phone, wire or write to Savings Bond Division, U.S. Treasury Department, Suite 700, Washington Building, Washington, D.C. Your State Director will be glad to show you how you can participate in the triple benefits of the Payroll Savings Plan.

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The Three

There were three, Claude Pepper, Frank Graham and Estes Kefauver.

They thought alike and voted alike in the Senate and their thinking and their voting was usually opposite to that of all other Southern Senators.

The voters attended to Claude Pepper and Frank Graham and replaced them with men whose thinking and voting was representative of the people of the South.

Had the term of office of Estes Kefauver expired at that time he would have gone out along with Pepper and Graham.

Now newspapers are asserting that Estes Kefauver will be a candidate for President of the United States, and the ultra-liberals and near-Communists, feeling that they cannot renominate their No. 1 man, Harry Truman, are lining up for Estes Kefauver.

Kefauver happened to become chairman of the Crime Investigation Committee of the United States Senate and, as the result of those investigations, obtained a very large amount of publicity although it is not on record that he had previously evidenced any interest in the elimination of crime.

Had Kefauver's term as Senator expired the same year as that of Claude Pepper and Frank Graham he would received the same treatment by the voters and we are certain that the liberals and the near-Communists will not be able to nominate him for President of the United States.

More About Industries Moving South

Governor Roberts of Rhode Island recently told his General Assembly that all the resources at the state's command will be used to fight raids on the state's industries by Southern states.

He pledged "bold steps" to build up the state's economy and declared the state itself should assume leadership in building modern industrial plant facilities to provide more jobs.

Specifically, Roberts recommended that $1,000,000 in state funds be set up in a rotary fund to build new plants of modern design to be leased to "responsible companies," whether present Rhode Island concerns or industries seeking to locate there.

We covered this subject in an editorial in our December, 1951, issue entitled "Why Mills Leave New England" and we stated then that we derived no pleasure from the misfortune of one section of our country even though it meant an increase in industries and in employment in the section in which we happen to live.

We also stated that we doubted that any textile mill had ever moved South because of lower wages although that statement has been made thousands of times by New England editors.

We likewise doubt Governor Roberts' statement that raids are being made upon Rhode Island industries by Southern states.

The idea of moving an industry from Rhode Island to the South usually originates in the minds of the managers of the Rhode Island plants.

They come to realize that if they are to stay in business they must modernize but hesitate to invest money in machinery which is to operate under the unfriendly legislation and labor union control conditions which exist where they are located.

They have learned that while there is a very slight difference in wages paid in the South they can, because of friendly and co-operative employees, obtain more production per dollar of wages in the South than in New England.

They have also learned that in the principal textile manufacturing states in the South, with the exception of South Carolina, there are "Right-to-Work" laws which make it impossible for unions to deny employment to a man or woman because he or she refuses to join a union.

Southern states protect union members in their right to employment but at the same time give equal protection to those who decide that they do not wish to join a union.

Governor Roberts' statement about retaining industries by setting up a revolving fund of $1,000,000 is surprising, because such an insignificant fund could not be spread very far.

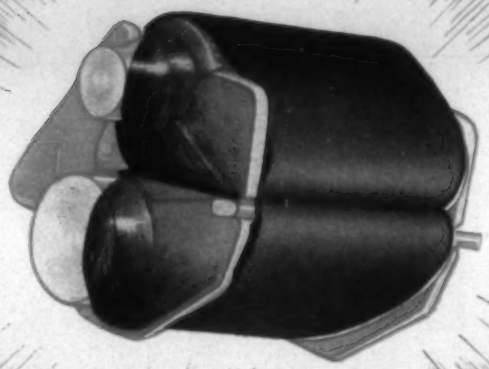
Instead of crying about Southern raids upon Rhode Island industries, Governor Roberts should be moving to make the lot of Rhode Island industries happier.

He should urge the Rhode Island General Assembly to ease the burden of excessive taxation and undue restrictions and should also remove the unfair advantage which labor union racketeers have been given over the operation of industries.

Governor Roberts should realize that the managers of manufacturing industries cannot be slapped around without having a desire to move to locations where they will not be slapped.

Since the above was written Francis W. White, president of the American Woolen Co., has issued a statement saying

1929
THE BEST THEN



1952
THE BEST NOW

A REPORT OF PROGRESS
on the Whitin 2-Apron System for Long Draft Spinning

The principle of Long Draft Spinning is not new. For years textile men the world over had sought a successful method of combining higher drafts with *better fiber control*.

In 1929, Whitin, recognizing the outstanding merits and possibilities of the Casablancas 2-Apron System, introduced it on a large scale to the American textile industry.

Its acceptance by the industry was quick and widespread. Today, we can report having equipped 10,000,000 spindles, including both new spinning frames and changeovers, with the Whitin Long Draft System. This far exceeds the number of spindles equipped with any other single type of Long Draft System in the world. This record highlights the competitive benefits that leading mills have gained from the increased production and the stronger, more uniform yarns that can be spun on this system.

Whitin now has had 23 years of research, development, and manufacturing experience in adapting it to meet mills' requirements. Originally applied to cotton, it is now being extensively used for spun rayon, and worsted blends also. This experience, plus new large research facilities, will enable Whitin to retain its leadership in building better spinning frames equipped with the 2-apron Long Draft System.

Whitin MACHINE WORKS

WHITINSVILLE, MASSACHUSETTS

CHARLOTTE, N. C. • ATLANTA, GA. • SPARTANBURG, S. C. • DEXTER, ME.

that his firm was considering moving all of its operations to the South.

In conformity with what we said above, Mr. White said:

New England's textile problem can be solved "only with lower taxation and by the reduction of our unit costs to a competitive level.

Speaking at a dinner at Central Catholic Auditorium Mr. White also declared:

Our agreements with both the labor organizations with which we are working—the A.F. of L. and the C.I.O.—should allow us to accomplish the job that labor and management must do if we are going to find the solution to this problem.

I do not believe an attempt to equalize wages and working conditions by minimum wage legislation and unionization would remove more than a part of the competitive advantage that the South now enjoys with its taxes and lower unit costs.

Governor Roberts should pay heed to the statements made by the president of the American Woolen Co. as Mr. White states that his plants will be forced to move to the South unless changes are made.

TEXTILE INDUSTRY SCHEDULE

—1952—

Jan. 28-29—Annual meeting, **NATIONAL COTTON COUNCIL OF AMERICA**, Roosevelt Hotel, New Orleans, La.

Feb. 1-2—**PIEDMONT SECTION, A.A.T.C.C.**, Robert E. Lee Hotel, Winston-Salem, N. C.

Feb. 13-15—**COTTON RESEARCH CLINIC**, Pinehurst, N. C.

Feb. 23—**SOUTHEASTERN SECTION, A.A.T.C.C.**, Alabama Power Co. Auditorium (afternoon), Purefoy Hotel (evening), Talladega, Ala.

March 3-7—Spring meeting and committee week, **A.S.T.M.**, Hotel Statler, Cleveland, O.

March 8—**EASTERN NORTH CAROLINA DIVISION, S.T.A.**, North Carolina State College School of Textiles, Raleigh.

Mar. 21-22—**CAROLINAS-VIRGINIA PURCHASING AGENTS ASSOCIATION**, Poinsett Hotel, Greenville, S. C.

March 29—**SOUTH CAROLINA DIVISION, S.T.A.**, Spartanburg, S. C.

April 3-4—Spring meeting, **TEXTILE QUALITY CONTROL ASSOCIATION**, A. French School of Textiles, Georgia Institute of Technology, Atlanta.

April 16-17—Spring meeting, **FIBER SOCIETY**, Clemson (S. C.) House Hotel.

April 16-18—Annual convention, **COTTON MANUFACTURERS ASSOCIATION OF GEORGIA**, Boca Raton (Fla.) Hotel and Club.

April 19—**NORTHERN NORTH CAROLINA-VIRGINIA DIVISION, S.T.A.**

April 25-26—**PIEDMONT SECTION, A.A.T.C.C.**, Clemson (S. C.) House Hotel.

May 3—**PIEDMONT DIVISION, S.T.A.**

May 6-9—**INTERNATIONAL LIGHTING EXPOSITION AND CONFERENCE**, Cleveland (Ohio) Auditorium.

May 12-17—**NATIONAL COTTON WEEK.**

May 15-17—Annual outing, **CAROLINA YARN ASSOCIATION**, The Carolina, Pinehurst, N. C.

May 15-17—Annual convention, **AMERICAN COTTON MANUFACTURERS INSTITUTE**, Haddon Hall, Atlantic City, N. J.

June 6-7—Annual outing, **PIEDMONT SECTION, A.A.T.C.C.**, Ocean Forest Hotel, Myrtle Beach, S. C.

June 12-14—Annual convention, **SOUTHERN TEXTILE ASSOCIATION**, Ocean Forest Hotel, Myrtle Beach, S. C.

June 23-27—Annual meeting, **AMERICAN SOCIETY FOR TESTING MATERIALS**, Hotel Statler, New York City.

Sept. 12-13—**PIEDMONT SECTION, A.A.T.C.C.**, Charlotte (N. C.) Hotel.

Oct. 6-11—**SOUTHERN TEXTILE EXPOSITION**, Textile Hall, Greenville, S. C.

Oct. 16-17—Annual meeting, **NORTH CAROLINA COTTON MANUFACTURERS ASSOCIATION**, The Carolina, Pinehurst, N. C.

Nov. 6-8—Annual national convention, **AMERICAN ASSOCIATION OF TEXTILE CHEMISTS & COLORISTS**, Boston, Mass.

—1953—

Sept. 17-19—Annual national convention, **A.A.T.C.C.**, Stevens Hotel, Chicago, Ill.

—1954—

April 26-May 1—**AMERICAN TEXTILE MACHINERY EXHIBITION**, Atlantic City (N. J.) Auditorium.

Retailers See Austerity In Prospect

A year of belt-tightening and austerity is in prospect for the nation's retail merchants, according to a survey made public by the National Retail Dry Goods Association on the eve of the association's 41st annual convention in New York City.

Forecasting an all-out war on needless expense, the survey noted that increased overhead, high taxes and payroll costs and lower mark-ups are likely to become serious threats to the profit picture for 1952.

Many of the executives, of more than 400 department, chain and specialty stores interviewed, indicated a growing interest in the expense problem, the survey said.

While it is realized that the National Retail Dry Goods Association, being interested in purchasing goods at the lowest possible prices, frequently issue pessimistic statements which they seem to hope will cause mills to seek business at lower levels, the above statement goes beyond that and indicates a fear that buyers will rebel against any further retail price advances.

The cycle of advancing wages followed by mark-ups in retail prices cannot go on forever, and while the National Retail Dry Goods Association may be too pessimistic, it is reasonable to expect buyer resistance to further advances in retail prices.

Naval Reserve Enlistments

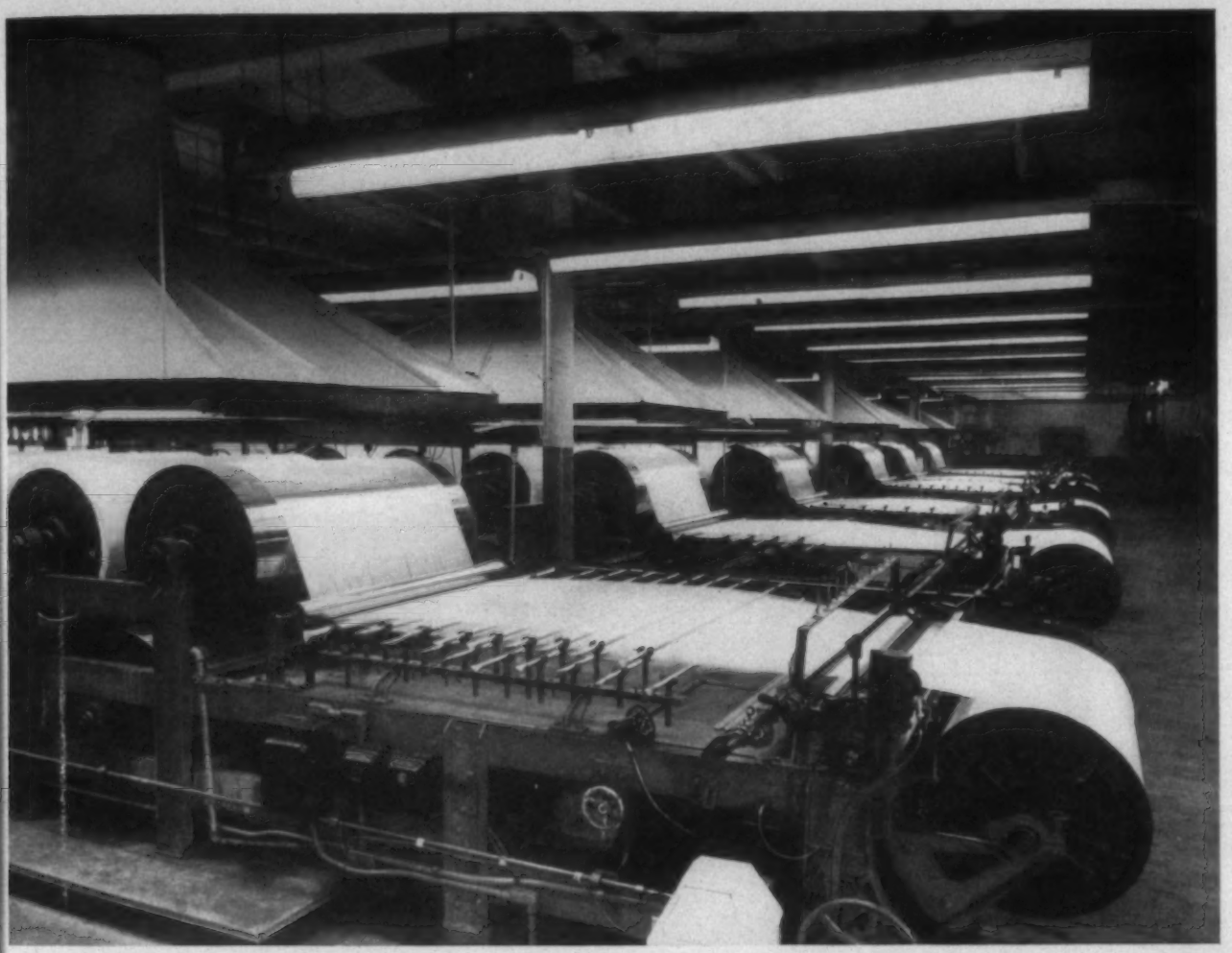
While Army, Marine and Coast Guard enlistments seem to have been on a reasonable scale, we have heard numerous reports relative to the Navy taking men, especially men in the naval reserve, upon a far greater scale than seems reasonable.

We are not at war with any country with a navy which can offer real resistance to that of the United States and with the exception of a few warships which, at times, bombard the coast of Korea, there is no naval action to be expected.

We are told that on some warships, they have so many enlisted men that it is difficult to find places for them to sleep or duties to occupy their time but young men who served in the Navy in World War II and elected to remain in the Naval reserve are being subjected to real hardships by being forced to leave their jobs and their families.

Naturally naval reserves with jobs and with wives and children cannot understand why they, who served during World War II, are called back into service while there is still an ample supply of young unmarried men and when warships are loaded to the brim with sailors and other personnel.

We have not heard any such complaints against the taking of men by the other branches of the armed forces.



Investment by Robbins Mills in
JOHNSON WARP SIZERS
has been steady since 1935

Robbins Mills installed their first Johnson sizer in 1935 when the company was called Pinehurst Silks and the town, later called Robbins, was known as Hemp, North Carolina.

In 1939 the first of the six Johnson sizers shown in the picture was installed in Robbins Mills plant at Red Springs, North Carolina.

In 1948, at their Aberdeen, North Carolina, plant a further Johnson sizer installation was made, and Johnson sizers have recently been installed in the new Robbins plant at Raeford, North Carolina.

Only Johnson Sizers are used in these Robbins plants—good evidence of trouble-free service rendered to a concern whose standards are high and whose requirements are exacting.

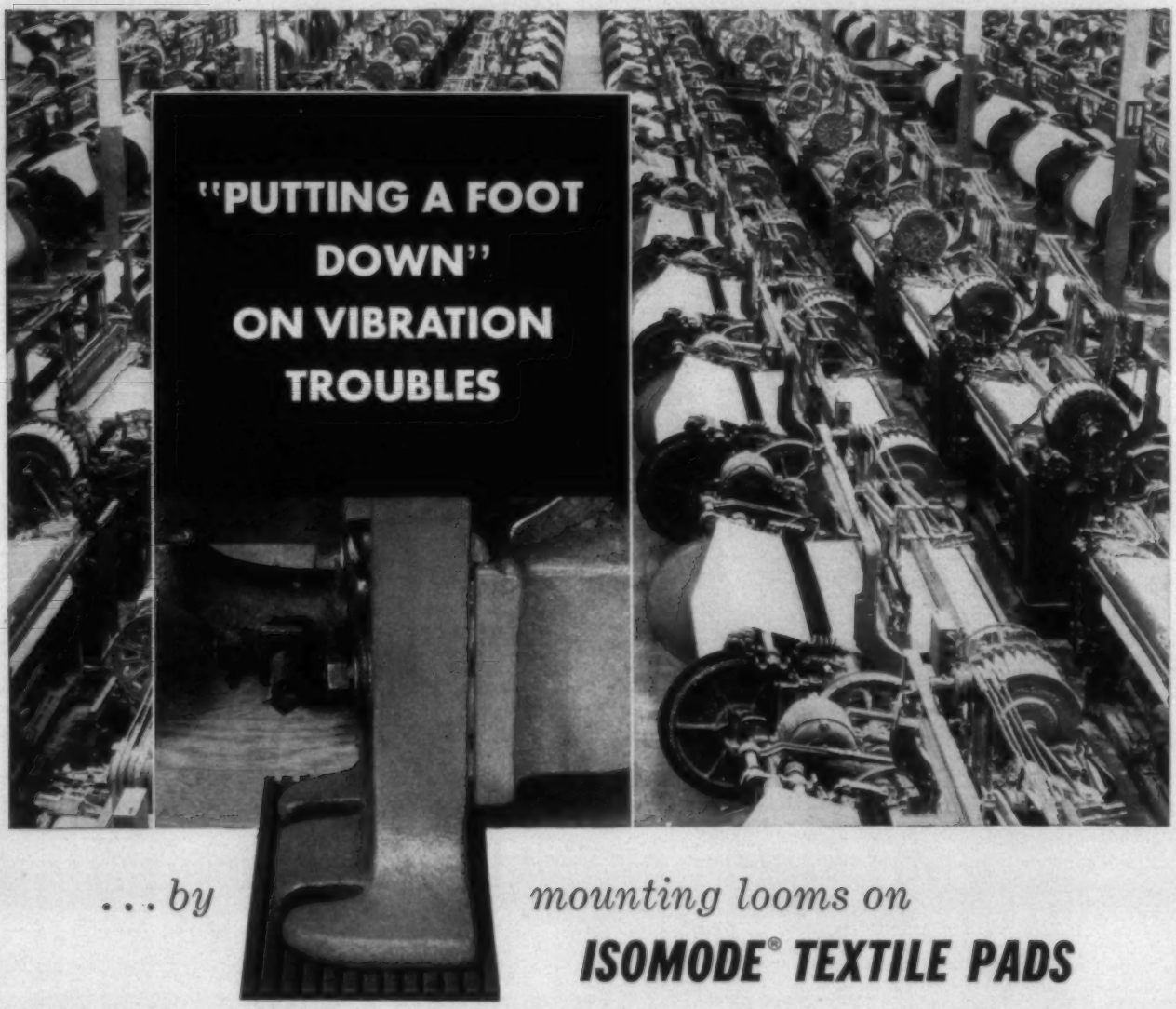
We are always glad to answer questions about our sizers.

Charles B. Johnson

PATERSON, NEW JERSEY

New England and Canadian Representative: J. S. FALLOW & CO., New Bedford, Mass.
Southern Representative: LUCAS ASSOCIATES, INC., CHARLOTTE 1, N. C.

Here's SPRINGS COTTON MILLS...



... by mounting looms on

ISOMODE® TEXTILE PADS

● Everybody knows how alert Springs Cotton Mills is for ways to improve mill operations and increase efficiency. So it's no accident that row after row of looms in their mills are now supported on Isomode* Textile Pads. Their experience showed that vibration control reduced excessive loom maintenance, noise, and disturbances transmitted to floor. Thorough testing and actual installations further proved that Isomode Textile Pads were not only one of the *best* vibration absorbing mountings to use, but also one of the most *economical.*

It's easy to install Isomode Textile Pads. Allowing ⅛ or ¼ inch overlap securely beds down loom legs on this resilient, ribbed, spring-like pad *without bolting!* You thereby end strains on looms, correct the effect of uneven floors—which helps to keep looms on the job longer.

Discover how little it will cost you to install Isomode Textile Pads and gain the substantial benefits resulting from vibration control. Write for data and prices. **Trade Mark Reg. U. S. Pat. Off.*

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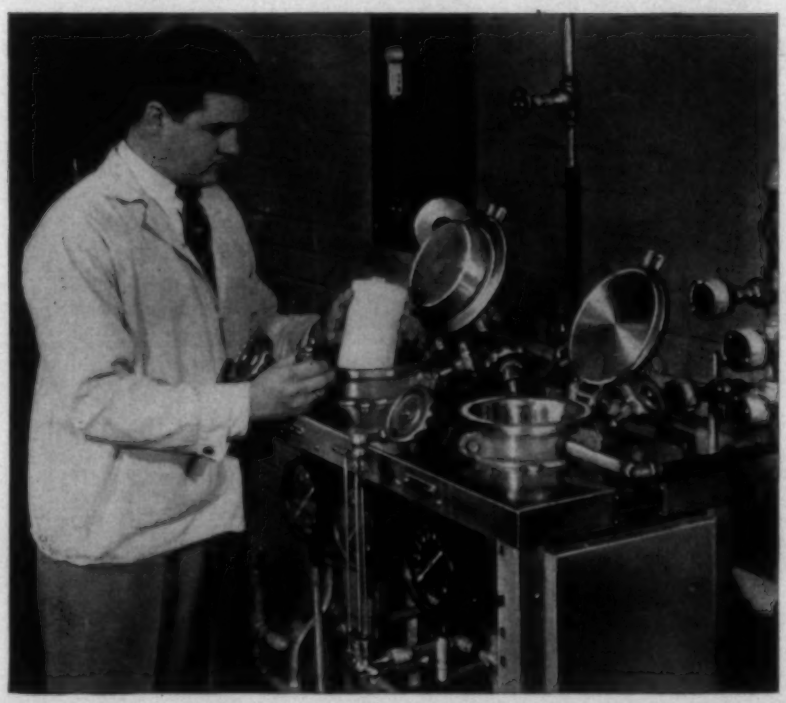
Rayon Reports

Prepared Monthly by American Viscose Corporation, New York, N. Y. JANUARY, 1952

NEW MACHINE SHORTENS RAYON DYEING TIME



Utilizes increased speed of diffusion at elevated temperatures and pressures.

A new type, high-temperature, high-pressure machine just installed in Avisco's Textile Research Department promises to shorten dyeing time for rayon and synthetic yarns and fibers. Increased thickness of metal in the machine permits operation up to 300° F. in a closed system with little or no air present, thus speeding dye diffusion and permitting use of vat and other temperature-sensitive dyes.

The pilot model now in operation is at present being used to work out problems in connection with Acrilan, the new acrylic fiber. Two pounds of yarn in wound package, cake, or staple form can be dyed. Its installation is part of Avisco's continuing effort to keep pace with modern textile technology, and broaden still further its service to its customers and the textile industry.

RAYON 20 YEARS AGO

PARIS, January, 1932 – Oversized umbrellas covered with rayon fabrics in bright colors and patterns are the newest style here.

NEW YORK, January, 1932 – Rayon plush is being used with a soft rubber backing for bath mats.

NEW YORK, January, 1932–A recent survey of department store personnel shows an alarming incidence of ignorance concerning the nature of rayon.

WHAT OTHERS ARE SAYING

The New F. E. P. C.

PRESIDENT TRUMAN'S creation of a little F.E.P.C. by executive order is unnecessary, ill-advised, and dangerous.

Unnecessary because:

The President's announced objective—to enforce a clause forbidding racial or religious discrimination by employers holding federal contracts and subcontracts—could be accomplished just as effectively, perhaps more effectively, by less controversial means.

This contract provision is an accepted part of the government's agreements with business firms accounting, under the defense program, for 18 per cent of America's gross national product.

Responsibility for enforcing the anti-discrimination clause rests on the head of each contracting agency in the federal establishment. Power to cancel contracts or withhold payment for non-compliance is the chief tool available for such enforcement.

All the President needed to do, if he were in doubt as to the status of enforcement, was to direct someone on the White House staff to ascertain the facts and report confidentially to him. Instances of non-compliance then could be called to the attention of the appropriate department head, with warning to take action or be removed from office.

That would be good administrative practice, instead of playing for the grandstand.

Ill-advised because:

The President is doing by executive order what Congress repeatedly and consistently has refused to do by legislative enactment.

Congress showed its disapproval of the Fair Employment Practices Commission which existed during World War II by refusing to appropriate funds for its continuance. Congress has considered at every session since then the establishment of an F.E.P.C. with even broader powers of compulsion over the hiring and firing of workers by private employers, and that legislation has never passed.

But if we are to have an F.E.P.C.—and the President's action is a limited step in that direction—it should be with the full sanction of the legislative branch of the government.

The President's powers and his exercise of them are already great enough without extending into fields where Congress has specifically withheld its approval.

Dangerous because:

President Truman's action creates new dissension in his own party and in the country as a whole at a time when unity is our great national need.

Every decision in these critical days must be judged in the light of whether it helps or hurts the American effort to strengthen defenses of this country. The President's order can only create confusion and widen the breach between our commander-in-chief and many of his people.

Whether justly or unjustly, the inevitable reaction in the South will be to assume that the President acted from political motives. Such a feeling about the commander-in-chief is dangerous in such times as these, and should not be encouraged unnecessarily by him.

We should like to see the President revoke this improper order.—*Atlanta* (Ga.) *Journal.*

What Is A Leader?

WHAT is a leader? Is he a man who has been promoted to a soft job as a reward for good service? Is he a super-being who gets people to work hard for him because they admire his superiority? Is a leader a person with the authority to order that things be done?

I think you will agree that a real leader is none of these things. In fact, I think we get the wrong idea when we think of a leader as someone people work *for*. In America every man works for himself. It is the leader's job to help the people under him to do a better job for themselves, and thereby become more effective producers of goods and services for their fellow men.

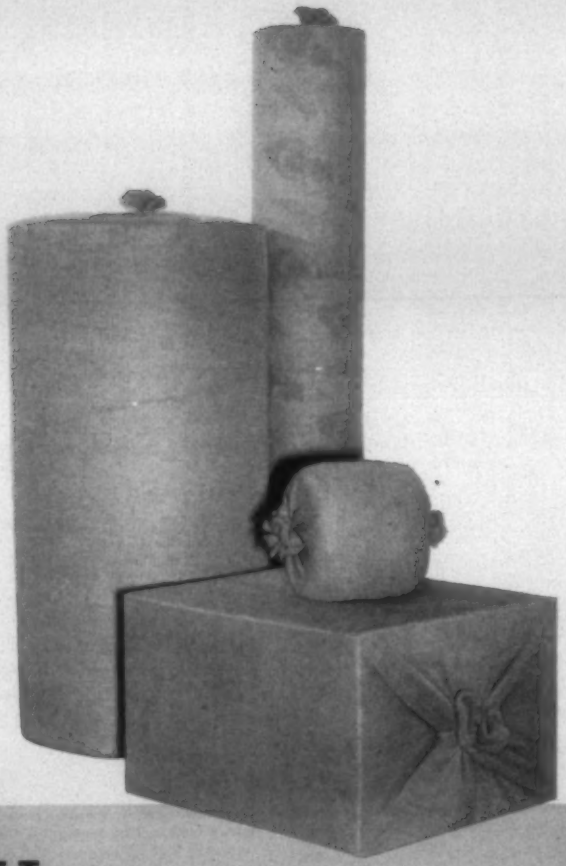
Our real responsibility as leaders is to work for our people. In everything we do we should ask ourselves, will it help my people get their job done? Let's forget about getting our own jobs done. If we succeed in helping people on the production line to do

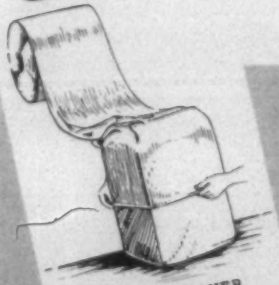
$ave TIME LABOR MONEY

With HPC JUTE TUBING*

*Made in U. S. A.

Available in 7½ and 10 Ounce Weights





PULL HPC OVER PACKAGE OR BALE

CUT AND FASTEN ENDS WITH WIRE

STENCIL AND SHIP

HERE at last is a fabric package cover that will completely modernize your shipping room with its scientifically designed economy and efficiency. This seamless cloth is made of strong jute yarn and is constructed so as to stretch and conform into a smooth, snug protective package or bale wrap. Regardless of package size, shape or weight—HPC JUTE TUBING fits like a glove.

CLEAN, EASY TO APPLY — **CUTS LABOR COSTS**

REDUCES MATERIAL WASTE — **EASY TO STORE**

200 YARDS TO A ROLL — **TAKES BRILLIANT STENCIL**

HPC JUTE TUBING comes in a wide range of widths. Contact your nearest Henley warehouse for samples giving the approximate dimensions of your package.

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a more effective job, then our own jobs *will* be done.

Yes, when we analyze it, we find that our real responsibility is not to the man we call boss, but to the men who call us boss. This is the attitude we need to believe in if we expect to succeed in using manpower more effectively. For, in the final analysis, it is the man below us, not the one above, who makes us or breaks us—makes our job a success or a failure.

By the same token, it is our duty to make sure our people measure up to their jobs. If we have done our job with people's welfare in mind, we need not hesitate to talk frankly with people about their work when they fall below par.

I believe that, in business, the human thing to do is likewise the practical thing. If we will put people first, they will put us first, and some of our toughest manpower problems will thereby be solved.

Helping others to become better men will automatically make us better men. It was true in Galilee 2,000 years ago, and it is still true here today. —*H. E. Humphreys, Jr.,* president, United States Rubber Co.

Old Problems, New Year

NINETEEN Hundred and Fifty-two is a brand new year, but the problems the new year will have to face are mostly old ones. Would that it were possible to start this brand new year off without the serious complex difficulties which have been brought upon ourselves.

Our problems are both national and international. It is difficult to say that the international ones are more serious than the domestic ones. In fact, the problems involved internally affect those internationally, and it is certain that the international situation greatly affects our internal economy and mental attitude.

As cheerful as we would like to be at the borning of the new year, we find it very difficult to muster up sufficient optimism to be able to predict a really good year.

Economists whose prime interests are in being economists rather than in trying to represent special groups which would change the complexion of our national system indicate that we cannot stand too much more taxing. In fact, to be realistic, we must recognize the fact that higher costs with prices which do not reflect increased costs mean less revenue for the government. Already those who have funds to invest are becoming less bold in investing their capital because of the trend toward state socialism. This is indeed a bad sign. Future progress of the country is seriously involved as is also tax revenue for the government.

Politics has been a restraining factor insofar as governmental economy is concerned. We also would hesitate to predict that we can expect very much help in that direction as we have too many politicians and too few statesmen in the positions that could effect real economies in government.

Another internal situation which does not brighten the horizon is the pressure groups that are constantly using every means available to them to force increased costs and at the same time to criticize the higher prices which result from the increased costs. These same groups constantly attack profits so bitterly that we cannot help but believe their true intent is to destroy profits. Communism or Socialism would become inevitable. Even if their campaigns stopped short of the confiscation or complete control

in these days of

MACHINE-PICKED COTTON

SUPER JET

BRINGS THE TEXTILE INDUSTRY THE ANSWER TO A SERIOUS PROBLEM

★

As the result of mechanical picking, grass, leaf stems, bark, shale and other heavy trash have become a serious problem to the spinner. A cleaner that will remove this trash, and also quantities of motey material which will make neps, will improve the spinning value of the cotton.

The heart of the Aldrich-Lummus system is Super-Jet, which floats the lint on a stream of air, past a sharp angle where an aperture strips out trash, neps, motes, even long grasses.

Lummus' 82 years of experience in the handling of cotton went into the development of this simple, efficient answer to effective cotton cleaning.

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Greenwood, S. C.

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Greenwood WorkS South Carolina

ALDRICH-LUMMUS CLEANING SYSTEM

of business, effective drastic requlations of profit would destroy individual initiative and individual freedom.

If we have properly digested even a small part of the international situation, we cannot face the immediate future with too much optimism. We are told that some situations have improved and that probably immediate war will not come. We have also been told that our psychological warfare has not been too successful and that we have made other types of serious blunders.

We are in better shape to defend ourselves and our international obligations than we were a year ago. Much progress has been made in our preparedness program and in working out agreements with at least some of the non-Communist countries. Even some of those countries which are co-operating with us manifest concern over our growing military power.

From an economic standpoint, few observers, if any, see any relief from the enormous needs of practically every free country in the entire world. Those needs, of course, mean that the United States will be expected to furnish the major part of the wherewithal. This means grants, loans, and aid plans. They all mean spending more American money.

We still have potentialities unlimited in the United States. We are richly endowed with natural resources. The American system of free enterprise is capable of producing untold wealth and higher and higher standards of living even in the face of a bad international situation provided free enterprise does not lose its freedom and is not shackled by pressure groups or political machines or those who still believe that we can perform an abdominal operation on the goose and get all the golden eggs.—*The Textorian,* Cone Mills Corp., Greensboro, N. C.

The Task Confronting Us

WHAT does our program for defense mobilization lack? I think its most serious lack is a full appreciation on the part of Americans of the world crisis that confronts us.

We need a new climate of understanding—and with it a determination to meet all the requirements of this crisis, *even if it hurts*—as it will. *None of us is going to be hurt compared with the men we have sent out to Korea to suffer, to bleed and to die.* Let us think of these heroes when we are prone to grumble about the relatively small demands defense mobilization is making upon us here at home. . . .

I am an optimist in our long-range ability to do the job; but I am not complacent about the immediate tasks at hand. Never before, not even in the days of World War II, have I felt as compelled as I do now to urge that we Americans bend every effort to achieve a national purpose to become strong. Let us never forget that this program has arisen from the horrible fact that the free, liberty-loving nations are being challenged by an enemy whose ideology, philosophy and practice are 180 degrees opposite to our own.

The task confronting us . . . is to build our might to such a point that we shall be in no danger of losing our own sacred freedom and liberty. —*Charles E. Wilson,* Director of Defense Mobilization.

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textile bulletin

VOL. 78 JANUARY, 1952 NO. 1

Textile Research Achievements Of 1951

By JULIUS B. GOLDBERG, Research Director, J. P. Stevens & Co., Inc.

MOST research in industry has three main objectives: (1) make it better, (2) make it cheaper, or (3) make something new. The textile industry is no exception in adhering to this pattern, but we still encounter many executives who either declare that they have no use for research in their particular phase of the business, or who think that they are supporting it only because it is "the thing to do." Nevertheless, a study of any part of their activities will usually reveal that whether they know it or not, they are sponsoring and even demanding some form of this necessary evil. The smallest yarn spinner who would not employ a trained textile technician or chemist even if he were a starving brother-in-law is very much research-minded when he decides to look into larger spinning packages, and the old-fashioned weaver who would rather invest in a new lavatory in his office than in a modest testing laboratory in his mill is endorsing research when he decides to try a new warp sizing that may improve his weaving efficiency.

Too many people have already expounded on the differences between pure or fundamental and applied research. Suffice to say that regardless of whether it is pure or adulterated, applied or mis-applied, practical or impractical, most research is costly if you support it but expensive if you try to compete without it.

The following summarizes many, but by no means all, of the textile research achievements recorded in 1951 in the scores of domestic and foreign journals, patent office abstracts and other publications of interest to our industry.

Man-Made Fibers

Since even technical men are not immune to the glamour of the colorful promotion thrust upon the layman in heralding the arrival of new miracle man-made fibers that will make life easier for someone, even if it is only the yarn producer, we start our review of research accomplishments with a look at the new or improved test-tube products. The recent reference to them as "wonder fibers" is probably more appropriate than "miracle fibers," since the poor consumer wonders what is coming next, wonders what it is made of and wonders how he will be benefited.

Taking the lead chronologically were a number of foreign developments. The Dutch displayed new faith in an old animal, the cow, that may some day replace the dog as a man's best friend. From this single source we obtain not only food and drink, but also clothing, both in the form of leather, and in fabrics containing yarns of casein derived from milk. One such product, Casolana, said to be the outcome of 20 years of research, was introduced by the Dutch Condensed Milk Factory. Judging from its relatively short life, the American counterpart, Aralac, which we all recall, may have been derived from evaporated milk, or even from vanishing cream. At about the same time Tovis, a Japanese crimped viscose staple with "wool-like" properties, was reported to have reached an export output of 100,000 pounds monthly, while Toramomen, another Japanese viscose process fiber was described as having exceptionally low swelling and shrinkage characteristics when wet. From Italy came limited amounts of Viscol, a flat-filament yarn reputedly suitable for plush fabrics, and the German-made Phrilon was offered as a competitor for nylon and Perlon. The distinctive name given to nylon produced in Austria was Austrylon.

Reduced swelling of viscose staple when wet with resultant resistance to shrinkage of the spun yarns in finished fabrics was accomplished by the addition of polymethylol phenol to the viscose spinning solution or application to the fiber as an aftertreatment, according to a patent issued to a French rayon producer. A glutinous fiber obtained from animal skins after dressing, Coiesco was manufactured in Italy and proclaimed as useful for felting or as a filler in blended yarns.

Although it was almost two years ago when we were first introduced to Fiber V, later called Amilar, as a candidate voted by many as the most likely to succeed in its class, it was not until early in 1951 that the now well-known Dacron became the official name for this latest Du Pont synthetic. One reason given for the change was that Amilar was the name to be used by a Japanese company for its nylon made under a licensing agreement with Du Pont. While on the subject of name-changing, Chemstrand, the acrylic fiber from the company of the same name, became Acrilan last Summer. Increased domestic output of the ever-popular nylon was promised for this year by the Chemstrand Corp.

While details were not published, a German report indicated that a special staple fiber with strong shrinkage and felting characteristics was being used to make a thick wool-like fabric which was also crease-resistant. Another German yarn of cellulosic origin was imported in several colors for use as a filler in rugs and carpets. Also intended for use by

the carpet industry, fast becoming sheep-shy, was Saran staple fiber, heretofore commercially available only in continuous monofilament form. From Germany, too, came PCU, a wet-spun polyvinyl chloride fiber with claims of better strength and chemical resistance than the original PC fiber, Cupressa dope-dyed cuprammonium filament yarn and Tanfiber, an acrylonitrile material.

At the Swiss Fair in 1951, Mirlon, a nylon-like product made from caprolactam, was exhibited for the first time. Using a name closely related to the animal yielding a fine grade of wool, the Italian-made Merinova was brought into this country in limited amounts and heralded as a greatly improved casein staple fiber.

Better resistance of nylon fabrics to loss of strength and exposure to light was claimed in one British patent issued to the Imperial Chemical Industries, Ltd., while a second patent by the same company covered the introduction of small amounts of an organic copper salt to improve resistance to the degradation of nylon by heat.

New fibers and yarns developed in the United States during 1951 were very limited in number. An eight-denier crimped viscose staple was made in small quantities to attempt to simulate the hand of 58s wool, and a product of the state of Vermont, always famous for maple syrup, green mountains and asbestos was Algil fiber made from polystyrene for use in batting form as a filtering medium. Late in the year, the American Cyanamid Co. produced limited poundage of X-51, an acrylonitrile fiber, while the patent literature disclosed active research on similar materials by the Industrial Rayon Corp. and the Celanese Corp. Only a few weeks ago it was reported that Orlon B was a new bulkier type Orlon yarn being made on a laboratory scale by the Du Pont Co. The Tennessee Eastman Corp. presented Chromspun colored acetate staple and filament yarns which were fast to sunlight, washing, dry cleaning, crocking and gas-fading. While technically not under the heading of new fibers and yarns, an interesting idea for making money was disclosed in the report that someone was not putting money into nylon, but on the contrary was putting nylon into bank notes. It is difficult to predict the outcome of putting together two scarce items.

Natural Fibers

Mindful of the old newspaper editor's criticism of the cub journalist who failed to report that when some world famous figure was interviewed he merely stated, "I have nothing to say," we feel that there might be some significance in the fact that no loud report of any novel processing development or new use for ramie came to our attention during the year. Cotton staple 1½ inches in length was said to have been developed in India with yields of up to 2,000 pounds per acre.

A Brazilian nettle fiber called Cotine was credited with a strength 40 per cent greater than that of cotton and preparations were announced for further exploitation of this material in South America. A chemical treatment to give cotton high dyestuff affinity and shrinkage of less than one per cent was announced as a joint process of the Aberfoyle Mfg. Co. and Switzer Bros., Inc., while a hydrocyanic acid treatment for cotton described by a Texas scientist as a means of improving the fiber strength was newsworthy but of no practical value. Cellulose-destroying micro-organisms were found by Kendall Mills research workers to be causing considerable damage to cotton in many areas and the new term Cavitomic was coined to describe the infected cotton. Announced some time ago as a substitute for jute, the first acreage of Kenaf was planted in Florida during the Summer.

Long-known for its merits in fiber form for pillows and as a buoyant filter for life-preserving garments, Kapok was processed into a web and sliver suitable for spinning according to a British patent on a new carding method.

In the animal kingdom, silk attracted more attention from its continued popularity to a limited extent in apparel fabrics than from any new research accomplishments. Increased consumption of silk without a single extra yard being bought by the consumer was seen in a novel patent issued to a New York inventor who utilized the silk to make a nylon crepe, dissolving the silk and removing it from the fabric in the process.

A happy marriage of the new and the old was suggested in the treatment of wool fabric with some nylon compounds to improve abrasion resistance and decrease felting shrinkage. From England came word of the use of iodine solution to make wool suitable for medicated wound dressings at the same time imparting moth-resistance. For modifying wool to reduce its moisture absorption and felting characteristics and alter its hand while adding weight, beta-propiolactone was offered for experimental use by a chemical company after the results of laboratory studies at the Western Regional Research Laboratory were made public.

Fiber and Yarn Processing

Indicative of the machinery manufacturers' appreciation for the importance of research, early in the year the Whitin Machine Works opened a new four-story pilot plant for the study of fiber processing. A precision picker knock-off requiring no special parts and adjustable to laps of any length was developed at the Southern Regional Research Laboratory. From the cotton branch of the Department of Agriculture came equipment designed to handle as little as ten grams of cotton for preparing specimens for laboratory tests. An old remedy for alleviating burning in the stomach found a new application to prevent burning of cotton in mills when bicarbonate of soda was found to be effective for dusting cotton bales.

For processing hard unsized cotton, rayon or wool waste, a Greenville, S. C., machine manufacturer offered a tandem unit which would accomplish the same processing in a single pass as an ordinary four-cylinder machine. Improved cotton laps through more efficient trash removal was achieved through modifications in the Saco-Lowell opener, and an English invention using a self-cleaning dead-weight principle tension device and a combined rolling and rubbing action was credited with the removal of dirt from yarn made of low-grade cotton. The late Eugene Gwaltney of Saco-Lowell suggested high-speed winding of cotton yarn as a means of removing considerable trash and neps from cotton yarn. Another English invention was a condenser said to produce sliver of smaller diameter permitting increased can content and higher production with fewer stoppages.

The combing of rayon staple attracted renewed interest with reports of a French type rectilinear comb employed after conversion of tow to top on the Pacific converter and the promotion of an Isotta-Fraschini comber to reduce neps and "dandruff." Further study was also recorded of the comparison between direct-spun rayon yarn using the angled high-speed apron and rayon yarns spun in the conventional

palatines for wool

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. . . are fast to light, washing, perspiration, cracking, sea water and wear.

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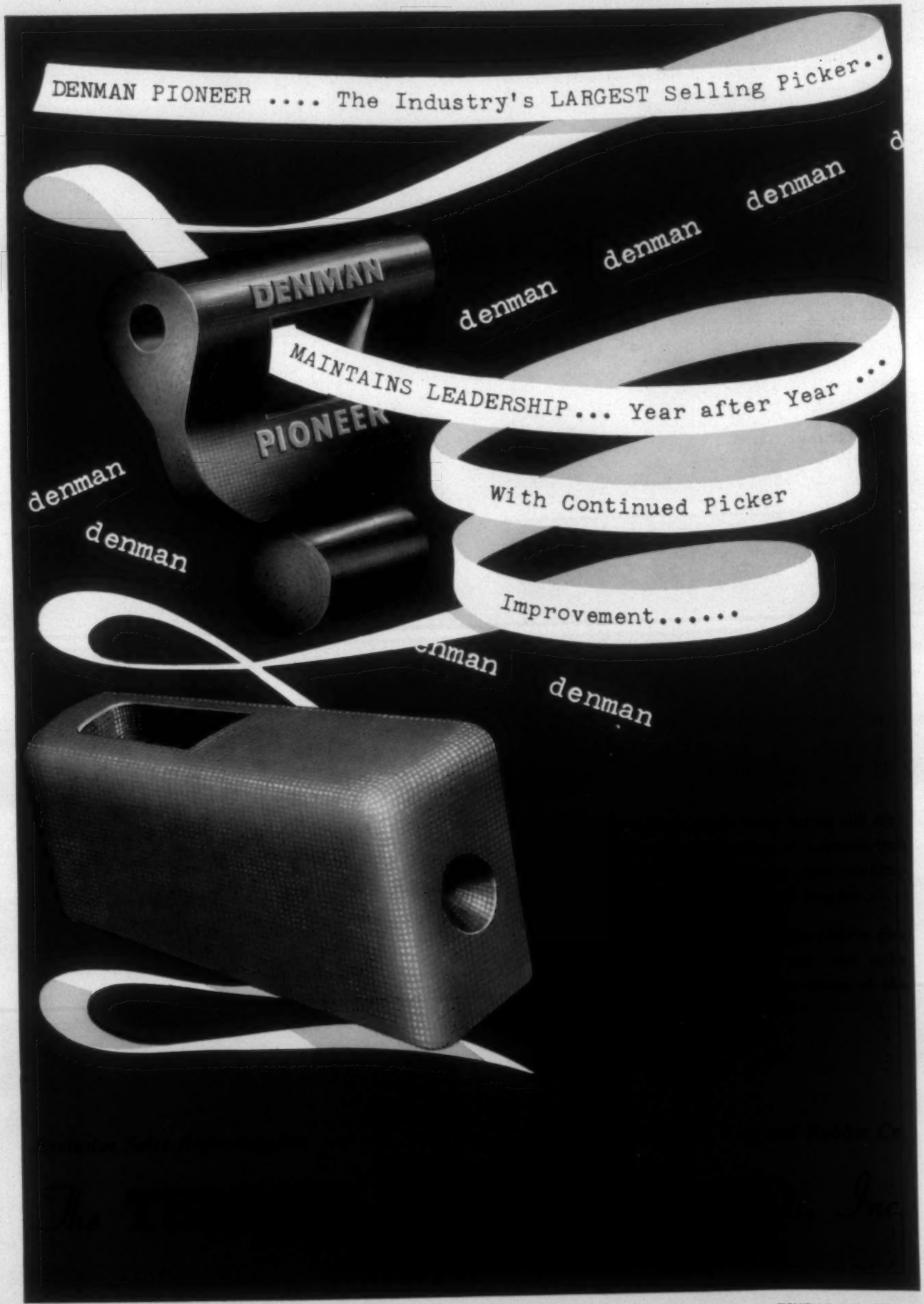
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manner. Improved spinning of staple fiber was attributed to the ZL drafting system originating in Denkendorf, Germany, while closer to home a patent was issued to a Rhode Island inventor covering a unique method of drafting wherein advantage is taken of induced electrostatic charges.

Further ingenuity was displayed in a number of new foreign developments and improvements in methods of yarn processing. Applicable to wool and cotton waste spinning frames with higher speeds and drafts and promising better yarn quality, the German Schiermeyer spinning device was proclaimed as a new idea in ring spinning, while finer worsted yarn counts were said to be made possible through use of a super "Rotaring" spinning frame made in France. A combination of the ultra-modern and the conservative was suggested by an English scientist's application of electronic controls to the mule spinning system. By using a spinning head above the spindle and a specially lengthened spindle and special bobbin, the Dutch Zoba system gave balloonless spinning with higher production. The German Autocopser was presented as a fully automatic winder featuring rotary traverse guide and greater speeds. An addition to the ever-growing number of two-for-one twisters was the Swiss Landolt twisting spindle adaptable to all types of up-twisters, and from the same country came a new Schweiter pirn winder and a refined model of the Giromatic winder.

In this country a new ring which operates without a traveler or lubrication was being considered for manufacture by the Pneumafil Corp. The Whitin CA twister featured provisions for traverses up to ten inches and the handling of up to four-pound packages with spindle speeds as high as 8,000 r.p.m. Improved yarn strength and uniformity were achieved in one yarn spinning mill by using ball-bearing front rolls on roving frames.

Warping, Slashing, Weaving and Knitting

The new McBride magazine creel allows speeds of from 200 to 400 yards per minute in woolen yarn warping, and a new English high-speed warper boasted of variable speed drive, ten-inch diameter barrels to hold up to 36,000 yards of warp and beam density control. The American Viscose Corp. reported progress in warping rayon from cakes at over 400 yards per minute.

Among methods described for obtaining slashing improvements were a simplified low-cost automatic tension control, the Hydropulse warp sizing homogenizing system, a new Swiss moisture content indicator, and the recently announced Cyl-Air combination cylinder and hot-air dryer.

The English Wool Industries Research Association "reaching-in" machine, originally made for woolen yarns, was operated successfully abroad on leased cotton warps. A Swiss-made automatic machine, appropriately named the Robot, affords means for the cleaning of heddles while they are in the harness frame, utilizing horse-hair and bronze brushes.

Principal loom developments recorded during the year were a new dobby attachment that permits appreciable shortening of the pattern chain for complicated cloth designs, a multiple-cylinder dobby attachment to produce jacquard effects and an inexpensive tensioning device designed at the Southern Regional Research Laboratory to allow weaving of high-pickage fabrics. Such fabrics have been of particular interest where more "cover" is desired, especially to make cotton naturally resistant to water penetration. The pursuit of a synthetic fur shuttle lining has been active for many years with the opossum still in the lead. Tufpile was one product of this type offered commercially in pile heights of from five-eighths to seven-eighths of an inch by a New Bedford company. We have heard of push-button warfare for many years, but the idea of push-button controls for looms is comparatively new. The Hunt Machine Works claims to be first with a new electric drive with push-button controls that can be adopted to any single shuttle loom, with production of the new drive scheduled for this year.

A British shuttleless loom, the Gabler machine, drawing filling yarns from a one-day supply bobbin at the side of the frame was made available in the United States through an American agent. From France came details of a square-shaped weaving turbine designed to weave four fabrics, each up to 141 inches in width, at one time, and a new model Fayolle two-shuttle circular loom particularly suited for the bag trade. The operation of looms by electronic controls was conceived by a German inventor, but mechanical details were not disclosed.

A ring temple roll was designed to use the principle of eccentric spacers to increase the pitch of the rings and thereby exert a minimum pull on the center of the fabric while increasing the tension at the selvages. The Rich-Lay vacuum silencer was described as a means for giving better weft control with less noise and maintenance while reducing the number of drag-ins. Among English weaving improvements were the Massta automatic selvage tensioner, the Stobbs spare end motion and the Gara weft trimmer.

Some of the newer products exhibited at the annual Knitting Arts show last year were a 168-spindle triple-deck uptwister, a German high-speed tricot knitter, various improved circular knit and hosiery machines, mending, sewing and trimming equipment and automatic wrapping and packaging machines.

A four to five-fold increase in production was claimed by use of a new nylon hosiery dryer which eliminates final boarding and handles the stockings in flat laid-out bundles.

In the increasingly active field of tricot knitting, improvements were reported in the Aveco, Reiner and Whitin tricot machines and a new electronic let-off control resulted in the elimination of shade-marks. A machine introduced early in the year incorporated the basic design of raschel and tricot knitting while operating at speeds close to those of tricot. The investigation of the tricot knitting of cotton jersey for outerwear and underwear was being continued at Texas Technological College.

Dyestuffs and Finishes

For better dyeing and finishing of fabrics made from the natural and man-made fibers, over 100 new or improved

dyestuffs and pigments and over 300 textile auxiliaries were offered in 1951.

A simple, economical process for bleaching wool with hydrogen peroxide was described about a year ago and at the same time an English company received a patent in this country on the bleaching of wool materials by contact with solid bleaching powder. Also from England came word of a new wool anti-shrink process using chlorosulphamic acid and still another shrinkproofing treatment was disclosed in a patent issued to a Maryland inventor in April. The practical commercial dyeing of wool and acetate blends was announced as the result of research by the Celanese Corp.

Discovered by a New England university scientist, a unique process in which cotton is treated with an organic solvent before mercerizing was said to result in appreciable reduction of mercerization time and cost.

The study of improved dyeing of nylon, Orlon, Acrilan and Dacron continued to result in definite progress as indicated by details published of new dyestuffs, the cuprous ion method and other techniques along with several new dyeing assistants, while the Tennessee Eastman Corp. made available five new acetate dyestuffs with high resistance to both gas and light fading. The Imperial Chemical Industries, Ltd., father of Terylene and the American version, Dacron, received a patent covering the production of colored filaments of Terylene through the introduction of organic coloring matter in the spinning solution.

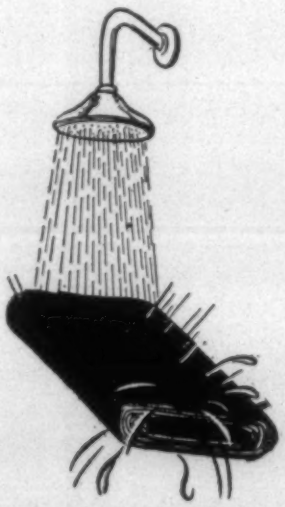
The General Dyestuff Corp. took the limelight in the field of innovations in dyestuff applications with the presentation of no less than three new processes during the year. First came a machine for dyeing or scouring raw stock continuously, particularly suited for vat or naphthol dyeing of rayon staple. Within a month announcement was made of the Williams hot-oil dyeing process with claims of more economical handling on short runs, better shading and appearance and reduced time of color development. The third major development was the Marhen process for making vat dyeing simpler and cheaper through the use of a recording potentiometer to measure potential reduction governing the dyeing efficiencies of the bath. The same company also reported as the outcome of co-operative research with the Fiberglas Corp. a resin-coating process for glass fibers to permit absorption of dyes, primarily suited for screen printing.

In the field of finishing, two new methods of stabilizing rayon fabrics against shrinkage or stretch in laundering were publicized last year. First came Avcoset by the American Viscose Corp., utilizing a combination of formaldehyde and Ceglin, to effect a permanent stability and complete washability with no added weight or chlorine retention. In November, Dan River Mills issued news releases on its new process for which somewhat similar claims were made along with those of improved crease-resistance and fabric durability. Either because words are beginning to fail us or because we learned from our study of algebra that X is the unknown, this mill, like the one which first called its metallic coated lining Fabric X and the chemical producer who currently designates his acrylic fiber as X-51, announced that the new stabilizing process was tentatively named X-2.

Improvements in fabric processing and finishing equipment were made evident by descriptions given of a new boil-off machine, continuous nylon heat-setting by electric radiant heat and also by steam setting of the fabric in roll form, a more compact fabric dryer, a compartment-type open soaper and a mechanical method for pre-shrinking knitgoods.

Fluorescent colors still provided a bright spot on the horizon of finished apparel fabrics with the announcement of one pigment color manufacturer that five colors were being produced for roller printing while a new process using such substances as polonium was said to eliminate the need for activation by ultra-violet light rays. Still another technique was indicated by the report that a Boston manufacturer planned to make garments of fabrics of cotton, rayon and nylon which would glow in the dark through the use of metallic sulphides incorporated with the dyes.

Screen printing innovations recorded during the past 12 months included a low-cost, multi-color process using halftone effects but limited to areas of 30 square inches, a merry-go-round circular table, a new type of aluminum cloth reel made in England, and an Italian ten-color printing unit with precision of 1/000 of an inch and remote control to permit operation of each of 14 motors from a central station. Also developed in Italy was an electronic machine for engraving printing cylinders eight to 12 times faster than any other method.

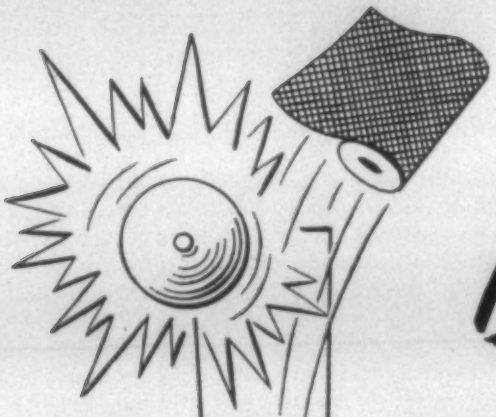


Texylon was a French chemical finishing treatment for cotton and rayon fabrics which depended on the use of silica to obtain durable improved wear-resistance.

Nylon continued to be a material of major interest and no less than 17 products to reduce static were described and their effectiveness discussed in an article publish just a year ago. While not regarded as highly flammable it was suggested that improved flameproofing properties could be imparted to nylon fabrics by the application of thiourea formaldehyde resin. Among the many new finishes offered for improving the hand and snag-resistance of nylon hosiery, one manufacturer affixed the attractive name of Bouquet to his stockings which were rendered perspiration odor resistant by a chemical said to be durable through at least 25 washings. A similar result was achieved by a special finish on rayon linings. Even dog-food is now being treated to keep dogs from smelling like dogs, and we wonder if we might not be able to some day invent a method for deodorizing bad business and politics.

New Developments in Fabrics

Not unlike the newspaper suspense headlines in which someone promises to make startling revelations that never



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materialize, was one report of an Italian insulating fabric composed of two layers of wool with a diaphragm separator supposed to be of interest to the military authorities, but no follow-up has been forthcoming. A new non-woven absorbent fabric impregnated with latex, X-Lint, was said to feel like chamois but to wear better and be only one-third as expensive. Also offered as a new material was an interlining consisting of wool, camel hair, and other soft fibers bonded by a "chemo-thermic" process.

The Navy Clothing Branch Research and Development Division reported reduction in the weight of waffle-weave knit underwear fabrics from 14 to eight ounces per square yard with no loss of insulation qualities. Recently an "anti-exposure" suit for Navy fliers was described as being composed of an insulation layer, a moisture vapor permeable but water impermeable coated fabric and a glove assembly. Long Winter underwear went out of fashion with the introduction of another military creation of new Winter combat garb in which a single layer molded plastic material employing the "vapor barrier" principle was worn next to the skin. Immersion tests showed that the garment was "unsinkable" and any skin moisture was warmed by body heat after the wearer was out of water. A throw-away cargo chute made of strips of cotton muslin was an Air Corps innovation reputedly much less expensive than rayon or nylon cargo chutes.

Last March the U. S. Rubber Co. received a patent on a woven asbestos and nylon press cover cloth which depended on the absorbent asbestos back to keep down the temperature of the nylon. This company also developed a new Fiberthin waterproof fabric said to be composed of nylon fibers and a plastic coating.

New promotion was given to the Joseph Bancroft & Sons Stazenu fabrics, originally publicized over two years ago, with features of "wool-like" character imparted to cotton and rayon through chemical finishing agents. A limited quality of ten-denier 60-gauge nylon hosiery was manufactured by one mill but was withheld from public sale through agreement with the Du Pont Co.

On one fine day in May a plastic-coated paper umbrella was marketed as the Rainbell to ward off showers, and on the very next day lack of confidence in such non-textile products was indicated by a textile manufacturer who announced an improved turkish toweling which was much more absorbent and loftier than older constructions.

A new use for Fortisan was suggested in a patent issued to the Celanese Corp. on a caustic solution treatment to make fabrics of this yarn durable enough for laundry bags. The answer to the next obvious question as to what will be durable enough for the laundry came with the development of a new two-ply cotton sheeting which laboratory tests predicted would give as much as 30 years' wear. No mention was made of how many sleepless nights the laboratory technician included before coming up with this answer. Most new inventions have bugs in them at the start, but it took the Army Chemical Corps to provide a fabric treatment to keep the bugs out even after repeated laundering. What might become a terrifying trend was anticipated in a newspaper report that the salesmen for one make of automobile were to be provided with sport jackets to match the cars' interior upholstery.

Testing Instruments and Methods

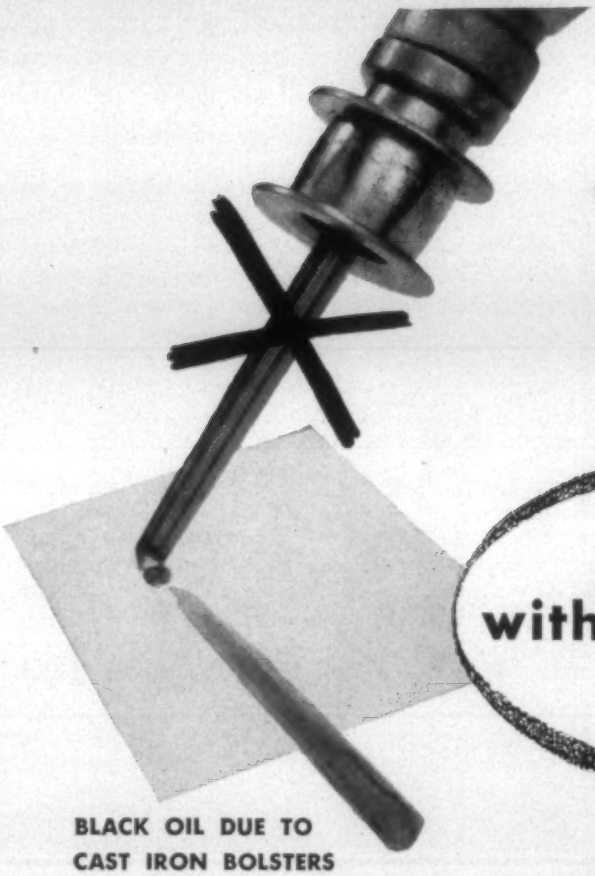
For testing yarn friction, Air Engineering Co. produced a device by which yarn is drawn from a package through a venturi tube by compressed air, while another piece of equipment for measuring and adjusting tension while the yarn leaves the shuttle was offered by the Saxl Instrument Co. Two new tension-meters were covered by U. S. patents issued in August. A new model American-made moisture tester enabled direct reading moisture content of all types of materials instantly and without calculations or charts, and a Swiss Hydrotester was said to be applicable to yarn or fabric during slashing or drying, giving direct continuous indication of moisture content without pressure of the analyzing electrode on the material.

From Spain came details of testing equipment in use in that country including a torsion meter for twist determination, a Filoscope cylinder yarn regularity board, a Microlanas microtome for making yarn cross-sections, a dynamometer for detecting weak spots in yarn and the Barella Regularimeter projection apparatus for judging yarn regularity.

A pocket-size pH meter weighing only three pounds and claimed to have an accuracy of 0.1 pH was the product of a New Jersey manufacturer. The English Fielden deviation meter automatically weighs one centimeter lengths of yarn, integrates the result and presents the answer in terms of percentage and deviation of the whole while the yarn is being reeled for check of the count. The Branca Cohesion Tester was an Italian machine designed to reproduce stresses and strains of weaving on sample warps for evaluating size mixes. The Swiss Uster Dynamometer was presented as an automatic yarn tester with capacities of up to 2,000 grams tensile strength and 40 per cent elongation, recording the sums and frequency distribution. The Spectrograph, an instrument for counting yarn defects, was described at a Quality Control meeting last Fall and was to be made available commercially this year. Originally designed for inspecting coils of strip-metal, an inspection table was modified to accommodate textiles, and permit examination of both sides in winding. A monofilament twist take-up device of particular interest to nylon hosiery manufacturers was introduced by the U. S. Testing Co.

Laboratory abrasion testing machines and methods continued to receive considerable attention from a special committee of the American Society for Testing Materials. Indications were that the flex abrasion test as made on the Stoll Universal Wear Tester developed at the Philadelphia Q. M. Textile Research Department was fast becoming popular in many research and testing laboratories, showing great promise in the constant search for a standard test method and results which might be correlated with fabric performance under service conditions. The Linen Research Institute of Belfast, Ireland, reported development of a novel abrasion tester which utilized a revolving turntable with a number of projecting metal snags to abrade a fabric specimen held against it under pressure exerted by an inflated rubber ball.

Long regarded as being backward in applying true quality control methods and statistics in the analysis of data, textile laboratory technicians showed signs of recognizing the merits of such procedures with the organization of a Textile



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due to black oil accumulating in spindle wells

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Quality Control Association in the South and by the appearance of numerous articles in the textile journals on the application of statistical methods to routine textile testing.

While not a true research achievement, a comprehensive physical textile testing manual prepared by Miss Wesson of West Point Mfg. Co. and particularly suited for training individuals for laboratory work deserves mention as a real contribution to the science of testing. To emphasize the functioning of a textile research laboratory a four-weeks' textile research Summer course was offered at M.I.T. under the direction of Prof. E. R. Schwarz, father of textile microscopy in this country and pioneer in fostering the growth of textile research.

With the introduction of so many new synthetic fibers in the past few years, an outline of chemical methods for determining quantities of nylon, Orlon and Dacron in wool blends as reported in one of the journals last April was most helpful to the textile fabric analyst. The newer fibers, too, have brought with them the problems of how to evaluate the comfort factors in apparel fabrics, and the Du Pont Rayon Pioneering Research Laboratory reported development of an isothermal chamber for measuring radiation, conduction and convection losses through fabrics as means of providing some of the data considered necessary to help answer these perplexing questions.

The Wool Bureau provided an excellent summary of suggested research and development studies in topics in mill processing, laboratory tests, product development and fundamental research. The same publication included a list of current research activities and where they were being pursued.

Persistent study by active committees of the American Association of Textile Chemists and Colorists indicated that the Fade-Ometer, in general use for estimating resistance of dyed fabrics to sunlight fading, required alterations to prevent excessive temperature rise and relative humidity drop to make the results more reliable. Again the newer synthetics provided subject for further research when it was found that the Fade-Ometer test results were not always directly related to actual sunlight exposure on many fibers.

Organization and Research Laboratory Activities

Committee D-13 of the American Society for Testing Materials was again active in revising existing test methods and developing new ones to meet the demands brought on by the introduction of new fibers, yarns and fabrics. Similarly, the research committee of the American Association of Textile Chemists and Colorists reported considerable progress in the establishment of test methods for dyed and finished textile materials, particularly on color fastness to sunlight exposure, dry cleaning and washing, degradation due to chlorine retention and dimensional changes in laundering.

Contracts were awarded under the Research and Marketing Act to the Institute of Textile Technology at Charlottesville, Va., for research in developing more effective methods of dry cleaning cotton textiles, to Clemson College for the study of the feasibility of the application of electrostatic forces to separate trash from lint and to the North Carolina State College School of Textiles for the design of apparatus to predict neps formed in processing cotton.

A "ring method" to evaluate hand and yarn stiffness and devices to measure yarn and fabric liveliness were described at the annual meeting of the A.A.T.C.C. in New York in October. At Pennsylvania State College a laboratory study of the use of high frequency equipment in washing of rayon fabrics indicated that strength losses in such materials were lower than those resulting in an automatic home washer. To evaluate warmth of textile fabrics, a semi-automatic apparatus requiring minimum operator attention was designed at the Southern Regional Research Laboratories. This important division of the Department of Agriculture was also responsible for a number of published reports on studies of cotton fiber properties, fiber and yarn processing and chemical modifications of cotton.

After a great deal of delay in making the selection of a suitable site, it was announced that Natick, Mass., would be the home of the new Quartermaster Corps $11 million laboratory, preliminary details of which were disclosed last Winter.

The Textile Research Institute at Princeton, N. J., reported a healthy growth during the fiscal year and encouraging progress in fundamental research on the structure of cellulose and starch, cotton fiber properties and instrument development. Special projects on the investigation of the mechanism of the dyeing process and the basic and chemical properties of wool continued, and in September a cotton research project was instituted to develop new and improved methods for evaluating the processing characteristics of various cotton fiber types. Government projects carried on at the T.R.I. included research on the resilience of textiles and the development of statistical methods for studying the relationship between fiber properties and yarn and fabric properties. To add the list of possible contamination of cotton fabrics, the Institute of Textile Technology announced the discovery of minute egg-like resin sacs in cotton trash which burst when subjected to heat and might result in tiny dark stains not normally removed in the scouring and bleaching process. Radioactive isotopes were reported in use at the Wool Industries Research Association at Torridon, England, to investigate the structure of wool keratin and dyeing processes.

The second annual Cotton Research Clinic sponsored by the National Cotton Council proved to be of extreme interest and benefit to all concerned with the use of cotton from fiber to finished fabric and the third meeting is to be held in Pinehurst, N. C., next month.

As indicated by this condensed review, we can once again boast of the important part played by research in the progress made by the textile industry during the past year. Faith in tomorrow's miracles depends on belief in today's research.

Mr. Goldberg's paper was presented before the Jan. 10 meeting of the American Association of Textile Technologists in New York City.

Ga. Manufacturers To Meet April 16-18

The Cotton Manufacturers Association of Georgia will hold its 52nd annual meeting April 16-18 at the Boca Raton Hotel, Boca Raton, Fla. The program for the convention will be released soon. Henry Swift, executive vice-president of Swift Spinning Mills, Columbus, Ga., is president of the association.

Reservation forms for requesting hotel reservations are to be distributed to non-members Feb. 1 and the association cautions those planning to attend that requests for reservations will not be honored by the hotel unless they are submitted on the proper forms.

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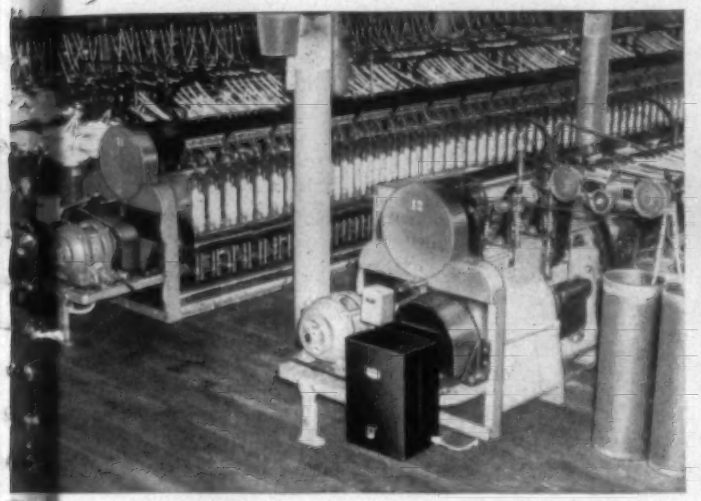
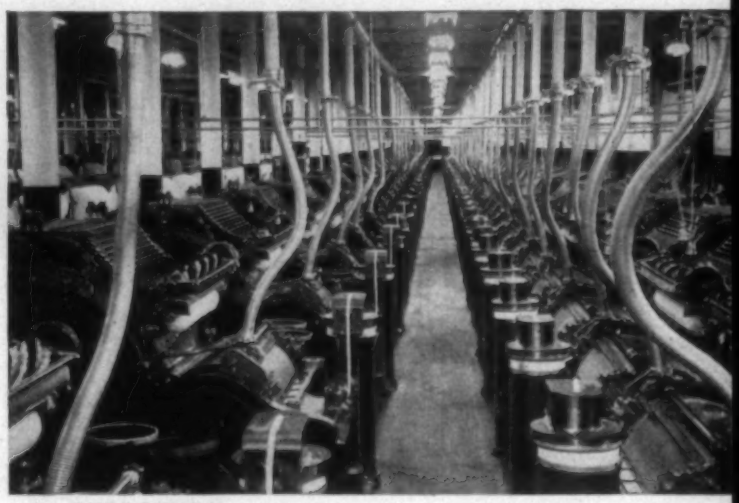
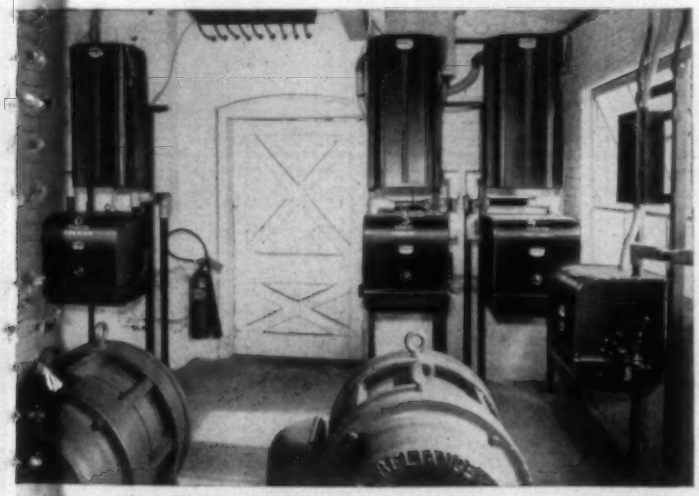


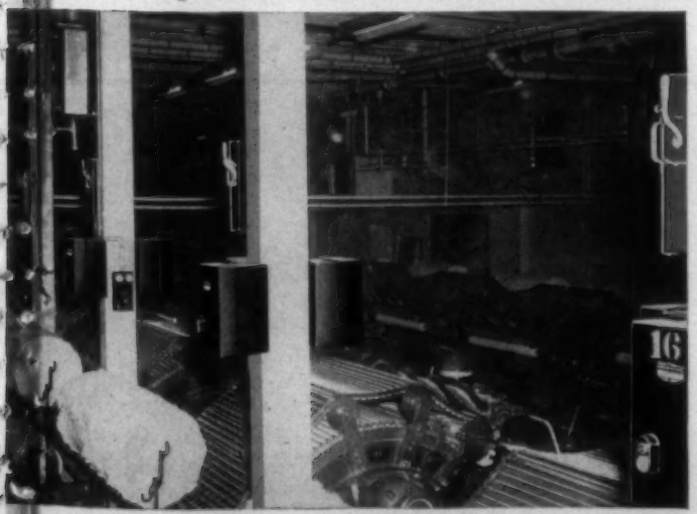
for FISHER at Fisherville, Mass. Cutler-Hammer Primary Resistance Starters are used to provide smooth starting as well as constant protection on these roving frames.



for EXPOSITION at Atlanta. Not only are Cutler-Hammer Card Controllers used on these individual motor driven cards, but Cutler-Hammer Motor Control is used throughout the plant.



for EDDYSTONE at Eddystone, Pa. Cutler-Hammer Safety Switches and Autotransformer Type Manual Starters stand guard over the performance of m.g. sets for cloth printing machines. Cutler-Hammer control widely used here.



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You too will find it pays to insist on Cutler-Hammer Motor Control and refuse all substitutes. An adequate network of Authorized Cutler-Hammer Distributors throughout the textile manufacturing areas insures prompt attention and supply. CUTLER-HAMMER, Inc., 1455 St. Paul Ave., Milwaukee 1, Wis.

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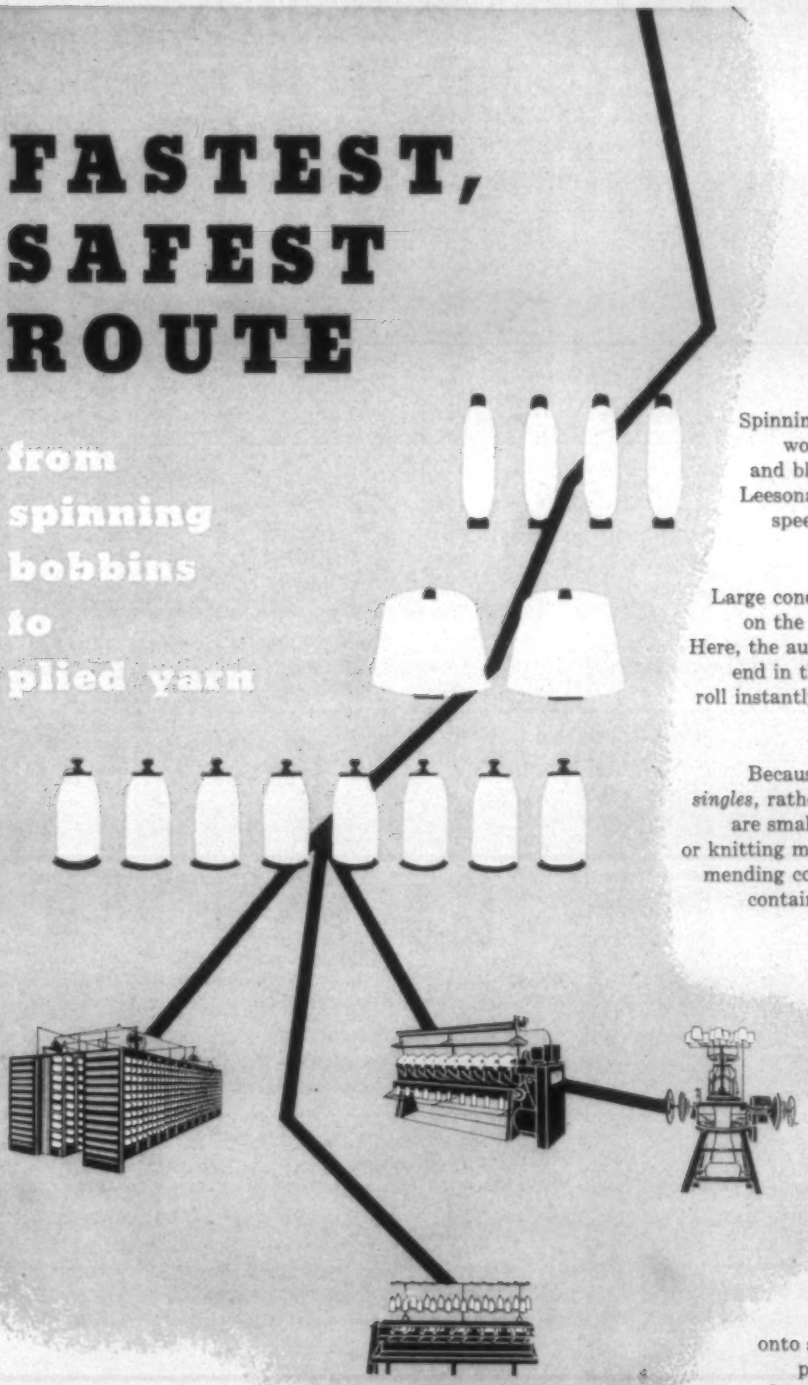
from spinning bobbins to plied yarn



***Eliminates** doubling . . .*
***avoids** costly delays*

Spinning frame bobbins of cotton, worsted, spun rayon, spun nylon and blends are used as supply for the Leesona Roto-Coner* which winds at high speed and inspects the yarn *in the singles.*

Large cones are used as an *overend* supply on the Model 10 Ring Twister. Here, the automatic stop motion for each end in the ply stops the spindle and feed roll instantly when an end breaks or runs out.

Because ends have been tied *in the singles*, rather than in the ply, the knots are smaller, reduce stops at the loom or knitting machine, save burling and mending costs. Also, the twister package contains no drop ply.

Plied yarn from the large twister packages is wound on the Roto-Coner* onto sales yarn packages with minimum piecing-up . . . or can be used as a direct supply to filling winders or in warping creels.

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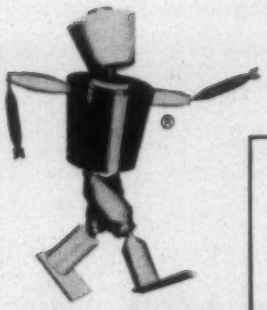

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Model 10
Automatic Stop Motion for Each End and Ply

'Dad' Hears How 'Son' Increased His Card Production 12 Per Cent

Dear Dad:

I wanted to be sure of myself before giving you the following report, but it seems to have worked out, and I'm right proud of what has been accomplished. In short, I have increased the production of my cards by 12 per cent. Here is what we were doing prior to the changes.

(1) Carding 8¾ pounds per hour.
(2) Stock was bright strict low middling.
(3) Cylinder speed 165 R.P.M.
(4) Doffer was set to 7/1,000.
(5) Flats to a 10/1,000.
(6) Licker-in 7/1,000.
(7) Feed plate 10/1,000.
(8) Doffer comb 22/1,000.
(9) Screen back 17/1,000.
(10) Screen bottom 68/1,000.
(11) Screen front $\frac{3}{16}$ths inches.
(12) Front top plate 29/1,000.
(13) Front bottom plate 17/1,000.
(14) Back plate, top and bottom, 29/1,000.
(15) Licker-in screen 34/1,000.
(16) Mote close as possible 10-12/1,000.
(17) Flat comb—flats 22/1,000.

With the above production of 8¾ pounds per hour and bright strict low cotton, I was getting the following average neps per grain.

Test No. 1 average for 200 cards 12.5 neps per grain;
Test No. 2 average for 220 cards 12.0 " " " ;
Test No. 3 average for 218 cards 11.7 " " " —
or an over-all average of 12.06 neps per grain. Yarn from this stock graded from B minus to B plus. These are the steps taken in making the change.

(1) Card cylinder and doffer "mike" tested for trueness.
(2) Those not true were surface ground.
(3) All worn cylinders and licker-in bearings were replaced.
(4) Card clothing was checked for looseness, ply separation, and short wire.
(5) All clothing having above defects were evaluated and those necessary, reclothed, both cylinder and doffer. (There were some exceptions where the clothing was otherwise good except having loose selvages, and the clothing was redrawn.)
(6) Sprocket shafts were checked, built up to standard where there was excessive wear.
(7) All plates that were scored or warped and could not be set true, were replaced.
(8) The heavy mote knife was used to replace the lightweight mote knife.

When all of the above was done, we proceeded as follows:

(1) Changed the motor pulleys to give 185 cylinder speed.
(2) Set doffer to the cylinder to a 5 instead of a 7. The theory on this was to make it easier for the doffer to receive the fibers from the card cylinder, hence, less loading of cylinder.
(3) Changed the doffer comb from a 22 to a 17.
(4) Back plate was changed from a straight 34 to 24 at the bottom and the top a 17. One important thing to be mentioned here was that we had three flats removed so that the top of plate could be gauged from the top and the bottom of the plate a 24 being gauged from the bottom with the licker-in out.
(5) The next change in the setting was on the plate; from a 10 to a 9.
(6) The cylinder screen at the back was left at a 17 but the bottom was changed to a 49, also closing the front from $\frac{3}{16}$th to one-eighth of an inch.

The following are my data on nep counts for the above.

Test No. 1 average for 220 cards 12.1 per grain.
Test No. 2 average for 220 cards 11.0 " " .
Test No. 3 average for 220 cards 11.1 " " .
Average for test, 11.4 per grain.

The mix in opening had not been changed and no picker work had been done. This, according to my tests, shows an actual reduction in neps from 12.06 per grain to 11.4. Also

Editor's Note: **It has been some time since we have heard from "Dad" and "Dear Son." The latter has been promoted to overseer of carding in a rather large room, therefore has been pretty busy learning the existing routine and not too much concerned with the new. "Pop," busy with his own problems, still thinks "Son" is moving along too rapidly.**

an increase of 12½ per cent in poundage. By leaving everything the same on the new set-up, except changing production gear to give 8½ pounds per hour, we get the following:

Test No. 1, 219 cards, 8.3
Test No. 2, 220 cards, 8.4
Test No. 3, 220 cards, 7.6

8.1 per grain

SON

Dear Son:

First of all, I want to get something off my chest, and I know you have been expecting it. So here goes: I think you have not had enough experience for the job. But maybe I'm not the man to judge. I'm surprised that Mr. ——— gave you that promotion this early, but he is a capable man and I have a tremendous respect for his knowledge. Guess I'm too conservative along those lines. Anyway, you youngsters are better prepared after three or four years, than my generation was after seven or eight. I'm glad you had the courage to make up your own mind and decided for yourself.

I have read with a great deal of pleasure the report you sent to me in regards to increasing your card production. I have gone over this thoroughly, thinking I could pick it to pieces. Frankly, I can't find any fault in your technique as to your results. As a matter of fact, we are going to try your idea, for we find ourselves in somewhat the same position. In fact, we are going to outline how you increased your card production 12 per cent, for one of the trade papers, for there are many others who need to do the same thing.

Your tests are most revealing. I'm sure many carders will disagree with you. Some will try and see; others will just say I don't believe it and let it go at that. Anyway I'm going to try your set-up.

I was very glad that you had so much success with your 1950 crop cotton. Most people won't even try the cut in the beater speeds and cuts in beats per inch. I think it will be just a matter of time until micronaire readings and Pressley breaks of fibers will be recognized as the two most important factors in spinability of cotton. I see no reason why micronaire reading cannot be certified at the gin and become a permanent marking on the bale. By all means set you a chart such as shown below.

You will readily see that we have a micronaire and Pressley of our cotton mix each day. The samples are made up by taking a small pinch from each bale blending all togther and then testing with both micronaire and Pressley. The yarn size is collected each day, laboratory tested, broke on Scott tester, then weighed to determine size. This size is checked with warper beam weights. All are recorded daily and averaged at the end of each week. The weekly average is marked on the chart in red pencil as indicated by star. You will also note weave room efficiency by each room indicated the same way. Since ours is a weaving mill, the same as yours, even though your styles are different, we feel that the true test of our yarn is its performance in the weave room. I know you get all the other data except the weave room efficiency, but I feel sure you will get that, too, if you go to your superintendent and show him what you are doing. After all data is no good unless it is correlated properly and then studied, conclusions drawn and intelligent action taken. It is a good idea to note any changes in cotton mix, twist or size changes. All have a bearing on the performance of yarn on the loom. Accurate and ready records, made available when needed and so arranged that they may be correctly and accurately analyzed are requisite to industry's successful operation. The same applies to a department or unit.

Earlier we mentioned the spinability of the 1950 crop cotton and what some of us did to avoid trouble. I'm thinking it may be a good idea to keep our breater speeds cut, even though all the indications are that the '51 crop is going to be a good one. I'm convinced that amount and distribution of rainfall, temperature, and hours of sunlight are big factors in the development of spinning qualities of fibers. We of course know breed and soil also influence this development, but I wonder how much thought has been given to these other factors.

Perhaps some of our research organizations or textile associations should sponsor such a research program and analyze results. Would take several years, but in the end, I

Date	Micronaire	Pressley	B.F.	Yarn No.	Room 1 Pct. Weaving	Room 2 Pct. Weaving	Room. No. 3 Weave	Room No. 4 Weave
2-23-51	4.1	77.6	1894	31.26	93.2*	92.7*	92.4*	91.2*
Average	4.1*	77.0*	1920*	30.91*				
2-26-51	4.5	78.0	2049	31.38				
2-27-51	4.0	77.3	2008	30.86				
2-28-51	3.7	75.5	1871	31.66				
3-1-51	3.8	76.3	1845	32.42				
3-2-51	4.3	76.1	1919	31.41				
Average	4.1*	76.6*	1938*	31.55*	93.2*	92.7*	92.9*	91.1*
3-5-51	4.2	76.7	1931	30.75				
3-6-51	4.0	76.7	1803	31.47				
3-7-51	4.1	77.0	1828	31.62				
3-8-51	4.0	77.6	1832	31.64				
3-9-51	3.9	76.5	1876	31.32				
Average	4.0*	76.9*	1854*	31.36*	93.4*	93.1*	93.0*	91.7*
3-12-51	4.0	75.7	1979	31.41				
3-13-51	4.3	76.2	1893	31.44				
3-14-51	3-8	76.1	2001	31.26				
3-15-51	4.1	77.2	1912	31.24				
3-16-51	3.9	76.0	1927	31.03				
Average	4.0*	76.2*	1942*	31.28*	92.6*	92.2*	92.2*	90.4*

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BESSEMER CITY, NORTH CAROLINA

28TH YEAR OF CONTINUOUS SERVICE TO TEXTILE MILLS

think we would know what to expect from our cotton from year to year. DAD

Dear Dad:

Following up your last letter, and comments, I now want to send you some more information, which you might use to (1) eliminate a card grinder in a large room; (2) reduce grinding and put more emphasis on settings; or (3) prove that I am wrong. This test was run under the following conditions:

(1) Pounds per hour carded, 7¾.

(2) Samples from web were taken full width of card web at mid-stripping point; daily.

(3) Same person person gathered all samples.

(4) Same person counted all neps.

(5) Tests were run some 2½ years ago and in another mill than that which now employs me.

(6) Every card was used in the test.

(7) Only sample of data is shown.

Some rather interesting things occurred. You will note the asterisks on the report for Card No. 10. We checked it, and found that the flats were 'way off at points; this condition was corrected, and you can see what happened. You will note that Card No. 2, Marked "O," showed a high count all the way. This card was examined later and it was found that wire on doffer and cylinder had much ply separation. Card No. 14, marked "N," shows consistently low nep counts; it had new wire on both cylinder and doffer. Between the 18th and 24th day, while the neps were no more numerous, they seemed larger and continued to grow larger as days elapsed between grinding. In fact, the neps seemed to take on the appearance of flakes.

All of which means what? It seems to me that most of us who are grinding every ten or 11 days are grinding too often. Why not try it and see what happens? Anyhow, set up a nep count like mine and you can easily spot your bad cards. How about sending me one of those sheets which you use to keep your card records? SON

Dear Son:

Your data on card grinding frequency is most interesting and on the basis of what you started and suggested we tried and were able to eliminate one card grinder. I know that this elimination might not always be the case, but there are other factors to be taken into consideration. We also found that if we delayed too long in grinding we might still have just a few neps but the neps grew larger and the yarn dropped in grade so there is always a compromise position.

You asked about the card record books we keep. I am sending a sheet along to you. You will note that the serial number is in ink and the card number is in pencil. This is so that if you have to rearrange your cards or add more, you can change your card number with very little effort. Where you see dates, you can also put in the marker of the clothing, brushes, bearings, licker-ins, etc. This, as the years go by, will be valuable information. If all carders had had such a set-up for the past 20 years, we would know which is the best to use. The space at the right is for clothier's initials. The back can be used to record any unusual happenings to the card which might affect the life of the clothing. Also a good thing to do is record the kind of fillet you grind with.

Year _____ Card Number _____

Serial Number _____

_____

_____

Cylinder
Doffer
Flats
Chains
Cylinder Bearings
Sprocket Shaft
Spiral Brushes
Rotary Brushes, Small
Rotary Brushes, Large
Rocker Shaft Disc. Brush
Feed Roll Bearing
Lickerin
Lickerin Bearings
Comb Box
Cylinder Surface Ground
Doffer Surface Ground

Keep on writing me, Son. I'm getting some education as the result of your experiences. Meanwhile, here's a wish for better carding. DAD

LISTED BELOW ARE "SON'S" TESTS IN CONDENSED FORM

Card No.	Days	Neps Gr.	Days	Neps Gr.	Days	Neps Gr.	Days	Neps Gr.	Days	Neps Gr.	Days	Neps Gr.	Days	Neps Gr.	Days	Neps Gr.
2 (O)	1	6.2	2	9.0	3	9.2	6	9.1	12	9.0	18	9.3	24	9.1	30	9.3
4	1	4.3	2	5.6	3	5.5	6	5.7	12	5.9	18	6.0	24	10.0	30	9.2
6	1	7.1	2	7.3	3	7.5	6	7.8	12	8.0	18	7.5	24	7.8	30	7.6
8	1	6.7	2	8.3	3	8.4	6	8.0	12	7.8	18	7.8	24	7.7	30	7.2
10	1	10.3*	2	11.0*	3	7.0*	6	7.2	12	7.1	18	7.6	24	7.5	30	7.4*
12	1	5.4	2	6.7	3	8.2	6	8.0	12	8.4	18	8.2	24	8.3	30	8.6
14 (N)	1	3.9	2	3.0	3	5.2	6	5.0	12	5.1	18	5.0	24	5.2	30	5.4
16	1	5.6	2	8.2	3	8.4	6	9.2	12	9.2	18	8.8	24	8.7	30	8.1
18	1	5.2	2	6.9	3	6.7	6	7.0	12	6.9	18	7.1	24	7.1	30	7.2
Average		6.08		8.46		7.9		7.44		6.48		7.46		7.93		7.33

THE MILL OF TODAY

By ROBERT Z. WALKER

Part 29 – Building the Roving Bobbin

THE building of the roving bobbin is one of the most remarkable feats performed in a spinning mill. In an industry unique for its efficient and meticulous handling of a delicate and infinitely variable material, the control required to make the roving bobbin stands forth as an outstanding engineering accomplishment. The bobbin can be filled with relatively weak roving only when all the separate movements and speeds of a massive machine are correctly and precisely co-ordinated, for any strain upon the roving will immediately break down the end. Yet, this action is repeated so many thousands of times a day all over the world that it is accepted in a completely casual manner.

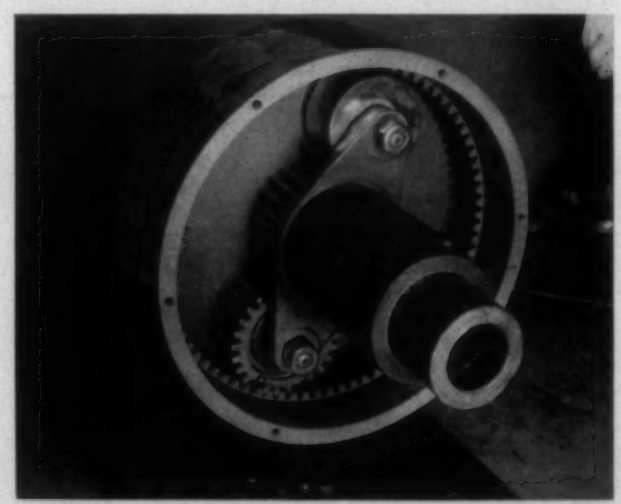
While the effort and ingenuity involved in the designing of the roving frame may not always be fully appreciated by mill operators and supervisors, all concerned do know some of the difficulties that are caused by poorly made roving bobbins. Poor roving bobbins can have a definite and harmful effect upon the over-all efficiency of the spinning mill, both in reduced efficiency at the roving and spinning processes and in increased waste. Because of this, the mill should not accept as standard anything but perfectly formed bobbins and should not be satisfied with makeshift adjustments which will make bobbins that will barely pass as satisfactory.

Bad bobbins are generally an indication of poorly adjusted frames or frames which are mechanically in poor condition. In some instances the poorly formed bobbin may be due to mistakes in using the wrong back stock or some other error of this type which would result in using roving of a density or volume not in accordance with pre-determined lay, or arrangement of the coils of stock on the bobbin. However, in most instances, the fault will be found to be mechanical. Some adjustments or mechanical corrections are simply and easily made; others will be found more complicated and will require more delicate adjustments or trial and error experimentation to correct. In the last discussion it was shown that the flyer could be responsible for poorly made bobbins if it was deformed, even though the roving was of the correct size and the remainder of the frame was in perfect co-ordination. It was suggested that the flyers be checked first when poor bobbins were made, and that they be examined and inspected for such faults as out-of-balance, damaged presser shape, wear, and rough or rusty surfaces.

The winding of the roving on the bobbin is not a simple matter by any means. Merely winding the strands of roving onto the bobbin, considering only the effect of building up a series of layers, is complicated by the fact that roving is soft and easily compressible; therefore, the approximate cylindrical shape of the strand will be destroyed as the pressure of upper layers causes it to flatten out. The fact that each layer of roving wound upon a bobbin will affect the physical shape of all previous layers is responsible for introducing most of the intangible factors making the design of the perfect winding machine almost an impossibility. No doubt a roving frame could be designed which would maintain a perfect tension and build a perfect bobbin for one size of roving with a given amount of twist; the complication is that the degree of compression of the layers of roving on the bobbin will vary with the size of the roving and the twist inserted. The very close control obtained on the modern roving frame is indeed a credit to the machinery manufacturers in so ably developing a universally acceptable mechanism for use on the entire range of roving made. The purpose here is not to go into a long and detailed explanation of the various mechanisms utilized to control and co-ordinate the movements required to build the bobbin; rather to attempt to show the relationship of these mechanisms to each other and to the whole, and to point out common errors of miscalculation and maladjustment which cause the formation of poor bobbins in the mill.

The first and most essential regulation is in controlling the speed of the bobbin so that the roving produced by the front roll will be wound onto the bobbin at a uniform rate of speed. The front roll speed is constant and therefore the bobbin speed may be co-ordinated and held to the same constant value. This winding speed is considered from the surface speed of the circumference of the bobbin and not as the number of revolutions per minute because the layers of roving are continually building up the bobbin circumference and therefore increasing the surface speed for a given number of revolutions. The bobbin speed must be adjusted so that the amount of roving wound onto the bobbin will be identical to the amount of roving delivered from the front roll regardless of the circumference of the bobbin. All common modern roving frames are designed so that the bobbin is gradually reduced in speed as the diameter increases.

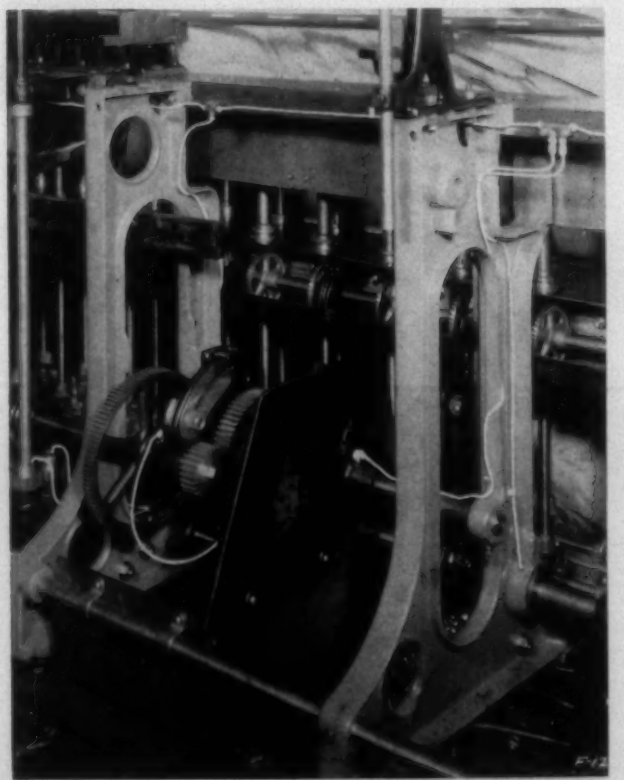
Although at the present time most roving frames are built with a "bobbin-lead" design to allow the bobbin speed



An inside view of the gearing of one of the latest types of compound, or differential motion, of the roving frame.

to be reduced as the bobbin is built, at one time frames were also designed so that the bobbin speed would gradually increase. This type of design was called "flyer-lead." Essentially, with the bobbin lead the bobbin winds the roving upon itself, whereas with the flyer lead the flyer wraps the roving around the bobbin. This means that with a flyer lead the flyer revolves quicker than the bobbin and must increase its speed as the bobbin diameter increases in order to wind on the same amount of roving as when the bobbin diameter was smaller. With a bobbin lead the bobbin has a higher speed than the flyer and decreases in speed as its diameter becomes greater. Flyer lead frames have been discontinued for a number of years because of several inherent disadvantages. The primary objection is that the bobbin must increase in speed throughout the building of the bobbin and therefore reaches its highest speed when the bobbin is full and is carrying the greatest load. This places a greater strain upon the frame and driving members and also requires more power.

The speed of the bobbin is always composed of a fixed speed and a variable speed, in order to obtain the correct amount of excess speed or winding speed over the flyer required to wind the roving onto itself. This speed is determined by driving the bobbin through a differential motion, which receives a fixed speed from the main shaft and a variable speed from the cones, and transmits a bobbin speed which is a proportion of the two. The compound or the driving motion are not apt to be the cause of trouble in the mill, except for some purely mechanical and readily discovered fault. The cone driving assembly is more apt to require close adjustment to maintain perfect bobbin building conditions.



The lay train regulates the movement of the carriage. This gearing, together with all members of the traversing motion, must be free from binding if perfect bobbins are to be made.

In general the only requirements of this, and the remainder of the bobbin building assemblies, is that the proper change gears be used consistent with the hank roving being made. Occasionally there will be troubles with such items as leaking compounds or differentials, a cone that has worn loose on the shaft, or a worn builder dog, but as a rule, the roving frame will operate successfully for years without developing serious mechanical breakdowns. The cone belt should be inspected periodically and replaced whenever wear becomes evident inasmuch as any slip which might develop would change the ratio of bobbin speed and would accordingly cause improper winding of the roving on the bobbin. This, in turn, would create changes in tension, either stretching the roving or allowing it to be wound too loosely so that a sloughing would occur when creeled in the spinning frame.

One of the main improvements that have been made in the roving frame has been the perfection of cone contours. At one time cones were designed for roving frames by working through complicated mathematical calculations which determined mathematically the necessary speed of the bobbin at every point during the building up of the diameter of the roving wound upon it. Although such cones were mathematically and mechanically correct in theory, they did not control the roving properly during the entire building of the bobbin because one important consideration was overlooked. These cones were based upon calculations which assumed, and incorrectly so, that roving was cylindrical in shape and remained perfectly cylindrical even when wound onto the bobbin.

Actually, roving compresses under the pressure of the other layers of fibers, is elliptical in shape, and varies throughout the building of the bobbin. For this reason, the calculations were not sufficiently accurate to enable a machinist to machine a cone having the proper speed contours.

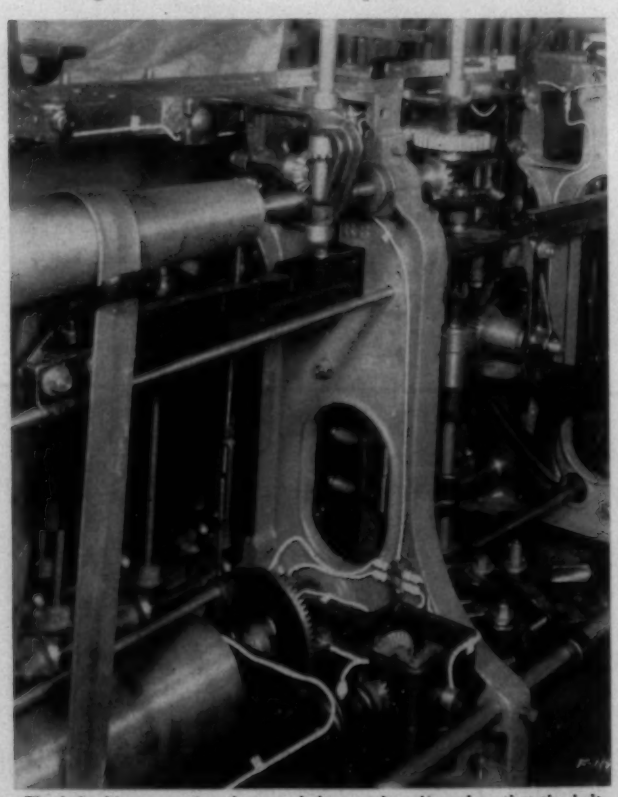
Since that time, the above facts have been realized and new cones have been developed which have a very close control of winding speed and consequent tensions during the entire building of the bobbin. These cones were developed by producing a general contour design through mathematical calculations and then by altering these contours through trial and error. The final result of these experiments was a cone which did not hold to empirical contours but did compensate for many variations in winding speed which could be explained and calculated only by taking into account such intangible variations that made mathematical predictions practically impossible.

The building of a roving bobbin requires first of all the winding of the roving onto the bobbin under a constant tension; secondly, a movement of the carriage in a traversing motion to lay the coils in a uniform pattern; and thirdly, a shortening of the traverse to obtain a properly formed and tapered package. It has been shown that the maintenance of a uniform tension is governed by the adjustment of the bobbin speed through movement of the belt on the cones as interpreted by the integrated speed of the differential, or compound. The proper formation of the tapered bobbin is governed by the builder and the lay gear train.

The most common changes which must be made in the mill are governed by the tension lay and taper gears. The lay gear controls the traversing speed of the carriage. As the carriage traverses in an up and down movement, the

bobbin is carried with it and, as the flyer maintains a fixed relative position, the roving is wound in coils. The distance between these coils is governed by the rate of speed of the carriage. The exact speed of the carriage is also difficult to calculate mathematically so that the mathematical answer will be the "best" speed. The only practical manner to determine the lay is to use the machinery manufacturer's constant and then to adjust this through a few simple experiments and trial and error. The exact distance between the coils is often a matter of personal preference, with some mills preferring coils very close together while others desire a considerable spacing. Generally, it has been found that the first layer on the bobbin should show open wood between the coils to an amount equal to approximately one-half the diameter of the strand of roving. This type of formation will allow the alternate layers to fall between the two adjacent ones without crowding or tangling. While this much space may seem excessive on the first layer, it must be remembered that the pressure of each added layer will change the shape of the ones beneath it and the pressure will tend to flatten out the layer strands so that they will occupy more space lengthwise on the bobbin. The movement of the carriage must also be synchronized to the increasing bobbin diameter. This is accomplished by driving the lay gear train from the bottom cone so that its speed will be regulated by the change in speed on the cone.

The tension gear regulates the tension on the roving by moving the cone belt along the cones. In other words, the tension gear determines the amount of movement of the cone belt with its corresponding change in speed for each traversing of the bobbin. This is permissible inasmuch as the diameter of the bobbin at the point of winding is changed only at each traverse. Here again the exact tension gear cannot be accurately calculated, although a close approximation may be obtained by using the tension constant of the frame as advised by the machinery manufacturer. Tension is affected by several factors which cannot be evaluated on a general over-all basis. For instance, the humidity and temperature in the room, the regularity of the drawing sliver creeled into the frame, the condition of the flyers and pressers, the uniformity of the bobbin diameters, the amount of twist in the roving, and the slippage of the cone belt, all affect tension. The tension should be such that the strands of roving from the front roll to the flyer are neither tight nor loose. There should be a slight amount of play in the strands as evidenced by "flopping." While no good mill man likes to see the ends loose, they should not be tight, as the strand is still in the process of being twisted and therefore is relatively weak and susceptible to stretching if undue pressure is applied. The tension gear and the proper setting of the belt on the cones at the beginning of the set is best regulated by trial and error. Errors in selecting the tension gear will be seen by changes in tension which must be regulated manually by the operator during the running of the set. When the frame will run from one end of the set to the other or from empty to full bobbin without any manual adjustment, the tension will probably be correct.

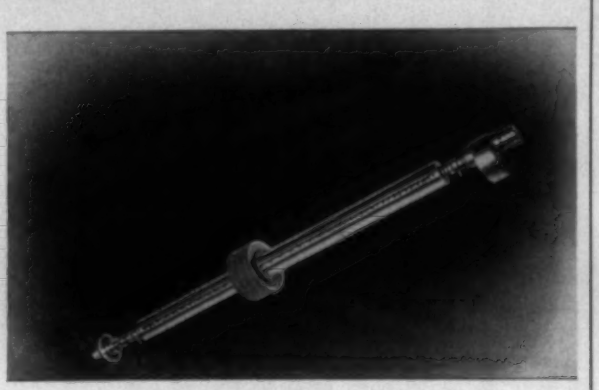


The belt shipper moving the cone belt must be adjusted so that the belt will be in the same position at the start of the doff, in order to control tension correctly.

The builder of the roving frame consists essentially of two jaws which control the changing of the movement of the carriage from one direction to the other. The builder is constructed so that the direction of the traverse is alternately changed when the end of the builder jaws is reached by a dog, at which time a reversal of the carrige is accomplished. The movement of the builder jaws together at each successive traverse shortens the length of the traverse and therefore produces the tapered effect of the bobbin build. The amount of taper is governed by the taper gear which regulates and controls the amount of movement of the jaws for each reversal of the builder. The tension gear is not a matter of too great concern generally, and unless changes in hank roving are great, the taper gear is unchanged. However, the taper should be corrected or adjusted when the frame is first put into operation, as tapers which are too steep will cause a reduction in the amount of roving per package, and therefore will decrease machine efficiency due to shortened doffing intervals, while tapers which are not sharp enough will cause sloughing and therefore excessive waste.

This discussion has been limited strictly to a general over-all explanation of the various movements which must be co-ordinated to build a satisfactory roving bobbin. The subject is deep, complicated, and requires a great deal of mathematical calculations if a full explanation is given. Such explanations may be found in any standard reference book, where there are no space limitations. For this reason, this discussion has been concerned only with pointing out the importance of co-ordinating the various sub-assemblies of the roving frame and the effect on production efficiency and quality of neglecting to do so.

The 49th annual convention of Phi Psi, national textile fraternity, will be held at the Clemson House, Clemson, S. C., May 1-3, it is announced by John T. Wigington, executive secretary of the fraternity.



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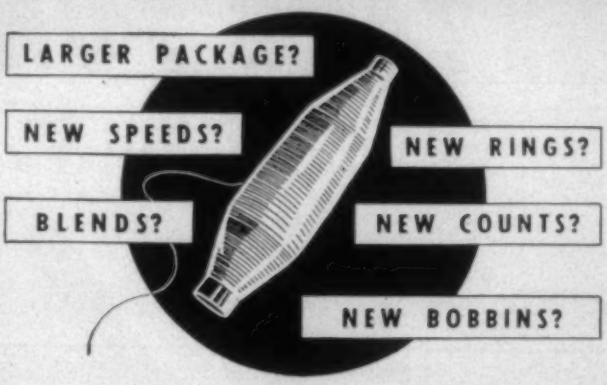

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Slashing And Weaving—As Seen By Piedmont Carolina Mill Men

A MAJOR PART of the Fall meeting of the Southern Textile Association's Piedmont Division, held Nov. 10 at Belmont, N. C., was a panel discussion on slashing and weaving conducted by H. Cleon Estes, superintendent of Pacific Mills, Rhodhiss, N. C., and a member of the S.T.A. board of governors. Members of the panel were C. D. Lee of Pacific Mills; Wilbur Pridmore of Brookford (N. C.) Mills; J. Ray Brandon and Barrett Wilson of Burlington Mills Corp., Cramerton, N. C. Following is a stenographic report of the discussion.

Chairman Estes: The first question for discussion this morning is "Have you had any experience with air-drying of yarns?" That is, by the Uxbridge hot-air slasher or some other method of air-drying.

Mr. X: I have had some experience. At that time we had two slashers and were trying out the Uxbridge slasher. Of course, one advantage you get is the rounder yarn, because you do not have the yarn go over the cylinder. I was able to get about 65 yards a minute speed. We had the moisture control in this particular slasher, which was gas-heated. We ran a constant speed, and the moisture control would register, and the moisture pick-up; and if there was any difference there it would automatically control the heat. That particular yarn was going into corduroy fabric. We found we could run up to 75 yards a minute, but we averaged from 50 to 60 yards a minute. In the other mill we had one running on which we did not have such good results. So we were not too sure about one of these slashers, and yet we were very well satisfied with the other.

Chiarman: Did you have any trouble with the yarn rolling?

Mr. X: We did not have so much trouble with that on this one slasher, with the yarn that was going into the corduroy. On the other we were putting in beam-dyed yarn and had a little trouble in the beginning. I would say it was purely experimental; that was about as far as we got on that. I should not want to say too much about the advantages, particularly with 30s and 40s yarn, the beam-dyed yarn. On the heavier yarn going into the corduroy it ran all right.

Mr. A: You state that the adjustment of heat is the controlling factor in maintaining a predetermined amount of moisture. The question in my mind is this; by the application of the heat are you able to control it quickly enough to have a uniform moisture control? In other words, what I am getting at is that in synthetics I am a pretty firm believer in the moisture pick-up being very consistent and on a very critical level. In other words, you do not have a cushion or a big range you can work through without getting into weaving imperfections. I am just wondering if controlling the heat rather than the speed is a standard set-up on the Uxbridge.

Mr. X: I do not know whether it is standard or not. As I say, it was experimental with us. This particular heater worked on a sort of valve affair. This roller ran right in the middle, as it does with most of them. Sometimes I wonder if it would not be better to be on the side. We had a very quick indication of interchange of moisture. You could see that valve right away.

Question: How quickly could you go in the heating chamber after you stopped the slasher?

Mr. X: Right away. It had a fan that blew the hot air out.

Mr. B: Did you notice any advantages by having a round yarn rather than one that is pressed out, in weaving?

Mr. X: I would not say definitely that I saw any advantage there.

Mr. B: You know there are a lot of theories about rounded yarn and pressed-out yarn on the conventional slasher, particularly as relative to the character of the cloth. In other words, if you want a sharp gabardine or twill or something like that, particularly in fabrics for outerwear garments, the character of the cloth can be greatly changed by the lack of roundness which you can place in the cloth by controlling the twist or what not. But in slashing we can affect that, and I wonder if you noticed that.

Mr. X: To my mind what would be better than that is the fact that this yarn goes through the heating chamber and goes over a series of rolls, and one of the main advantages there would be all-round heating of the yarn—more even heating all over the yarn rather than from one side, as with the conventional slasher. But we could not see any advantage in the cloth.

Question: Were you running end lease or what?

Mr. X: Just regular lease; 1 1/16-inch staple, middling.

Question: On your lease rods in front there was not too much breaking of fiber there, was there, as on the conventional slasher?

Mr. X: Well, not as compared with the conventional slasher.

Question: In other words, were you approaching a condition there of drying the individual ends to the extent that they did not break too hard, or were they dried as a solid sheet which would break with the same force as on a conventional slasher?

Mr. X: I would say the breakage was about the same.

Chairman Estes: I think there has been less improvement, probably, in slashing than in any other process in the manufacture of cloth. I know what the last gentleman had in mind; he has talked it over a number of times with me. He would like each individual end to be dry, so the ends would not have to pass through a series of lease rods and then tear apart again.

Mr. Y: I think probably with synthetics that is more important than with cotton. When you have these wiry fibers and plasticize them and then break them apart you just build in a lot of problems that come about on the loom from the warp being fuzzy, and so forth. We have been interested in that slasher because we feel that probably it has a place in synthetics and will help us. We have a small Callaway slasher that has a drying unit in it; we use it on our experiments. Of course, it is hard to evaluate a unit on that very small production. I think sometimes we have gotten help by running it through the drying chamber, but it is difficult to determine the value of it as compared with can drying. We rather felt from that little bit of experience we have had there that there is a possibility.

Mr. C: I should like to add one thing to this general discussion. Someone made a remark to the effect that he would like to see a slasher that does not have split rods on the front. Well, Saco-Lowell has that slasher, and you can see it before long. I am running four Uxbridge slashers on 30s yarn. We are pretty well satisfied. As to whether you should regulate the heat or regulate the speed, you can with one type buy a control which does regulate the heat. On the Barber-Colman there is a double pair of rollers that extend the full width of the front slasher, so the entire sheet of yarn passes through there. The type we are using regulates the stop motion in accordance with the amount of moisture you want to hold in the yarn.

Mr. Y: In other words, yours is not like his. Are there several models, or do they make them up to your own specifications?

Mr. C: What you buy from Uxbridge is the box. If you have

pretty good equipment on either end, that is in pretty good condition, then you do not have to throw it away; you can use it. You can go either to electronic drive or mechanical drive. As far as speed is concerned, with the ordinary slasher running 40 to 50 yards a minute on 80-square, on this machine it will run 80 to 100 yards a minute.

Chairman Estes: Let's go on to the second question: "What experience have you had with homogenizers?" Has anyone had any experience with them?

Mr. Z: We have one 50-gallon homogenizer on an experimental basis now. Frankly, I can not say too much for it or against it. We have run some tests on 30s single yarn and have not shown any increase in production. One thing I should point out is that you can prepare your size a little faster. We are using potato starch, and it takes about 2½ hours to cook it. With this homogenizer it takes about 45 minutes, still using potato starch.

Chairman Estes: It does show quite a saving. Some mills put in the homogenizer and put in nothing but pure pearl corn starch. At Rhodhiss we have one on which we ran some samples; not a large amount, but the last test we ran was about 10,000 yards. We used gum which cost us around nine cents. Of course, with the pearl starch there was quite a saving. The information I have from our other plants is that the saving was enough to pay for the homogenizer in a year. I should think you could use pearl starch rather than potato starch. Nobody that we knew of had been able to use thin starch on spun rayons, so we took this homogenizer on a trial basis. The question, so far as Rhodhiss is concerned, is whether to go ahead and buy this one or maybe go ahead and use the different gums that we are using now. There is one reason why we are not particularly interested in it, and that is the difference in the fibers that are coming out today. You have so many different fibers that you can not use the same size for them. On a straight viscose-acetate blend, which was the blend on which we ran the tests, we did not have any trouble at all. But if you run one blend this morning and another this afternoon and another tomorrow I do not see much advantage from it. If you stay on one blend you can use it to advantage. I do not think you can run 100 per cent acetate on it. Do you?

Mr. Y: No. If you have 100 per cent viscose, which is a very highly hygroscopic type of fiber, you can use pearl starch and do a good job of making warp. But if you get into these non-hygroscopic fibers, which do not pick up, then you have to have some other binder or another sizing agent. Of course, there are agents coming on the market now that do not require desizing on synthetics; in other words, you can go straight to dyeing and not go through desizing, which is a rather expensive operation. So you have a sort of two-barreled gun looking you in the face when you talk about purchasing a homogenizer for a mill processing spun rayons.

Question: Do you think a commercial finisher would have difficulty getting that out or would charge more for the finishing?

Chairman Estes: Well, if they have up-to-date equipment I do not see why they could not. I have experiecned no trouble whatsoever.

Mr. Y: I am inclined to agree with Mr. Estes that you could get by without using potato starch. Naturally, the cost would not come down any if you use the same material.

Chairman Estes: I do not see any advantage in it except a saving in starch. Let's take up Question No. 3: "Do you use nylon or wool blankets on your squeeze rolls, and which do you prefer?

Mr. E: We are using nylon on an experimental basis. It looks as if it probably finishes better, and of course it will last longer.

Mr. Y: In one mill I have a nylon blanket running. Of course, like all the rest, it has 12 per cent nylon in it; the rest of it is wool and reclaimed wool. I have been running all-wool and reclaimed wool blankets. Every time I go up there I am tempted to take the darned thing off. We have had it running since July—one blanket. I had some work done on our squeeze roller and at that time put on some blankets, and they have run the longest time I have ever seen blankets run, apparently without any ill effects in the weaving or finishing. In other words, we have had no complaints about the finishing, and our weaving has been very satisfactory. That is on a 50-50 blend of acetate and viscose, and heavy yarn. It is coarse denim. I tried it on some 100 per cent yarns, fancy work—that is, Bedford cords and things like that; and it is not satisfactory at all. In other words, the 100 per cent yarns are not compatible with the action of the nylon; you get some damaged fibers and do not get the dressing that you would on the 50-50 blend. That has been my experience, based on six or eight months.

Mr. F: Is that a resin-treated blanket?

Mr. Y: No, it was not. I have some resin-treated blankets now that I am trying.

Mr. F: Do they get hard?

Mr. Y: You have to wet them down carefully when you start the slashers. Naturally, nylon does not absorb water, and it takes a little longer to wet it down when you start the slasher.

Mr. F: You do not have to take it off to get the size off it?

Mr. Y: Oh, no; no. It has never come off since it was first put on. We are running two boxes, with an average number of ends around 6,000, the number of ends being 3,000 in each box. In that way they are not too crowded. I do not see any disadvantages other than the one fact that you have to be rather particular in wetting it down; and they do tend to pick up lint. It does pick up the lint a little excessively; and particularly on spun goods, singles, there is a lot of lint; and the blanket tends to pick it up . But you can take a light brush and brush it off and be ready to go. That

Attendance a tthe Piedmont Division's slashing and weaving discussion was not large, but Cleon Estes *(inset)* led an interesting 30-minute session.

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is not an immediate effect; that is a long-time, building-up effect.

Question: What weight do you use?

Mr. Y: Relative to the weights of squeeze roll, dressing, etc., which are 700 pounds, we find that 13-ounce gives us the best dressing, in my opinion.

Question: Is that blanket on a cast-iron roller?

Mr. Y: Our back roll is a rubber-covered roll, and the front dressing roll is a cast one. It is vanadium-treated. Our cost of blankets got quite high, using gum. I got tired of buying blankets every 12 or 13 months and was allowed to try a vanadium-treated roll. We do not even have a sheet on it.

Mr. D: I should like to mention one thing in blanket life—that maybe the roll has more to do with the life of the blanket than anything else.

Mr. Y: Of course it does have considerable to do with it. If you keep your roll in condition to where you are not getting an effect from metallizing or any action of the size on the metal I think the type of blanket you are using is immaterial, but if your rolls are in condition then I think you get an advantage from the nylon content of the blanket itself.

Mr. D: There is one thing which is very inexpensive and very good. One manufacturer has a tape which you wrap around the roll until you get two full layers on it, and it will increase your life a lot. That might be cheaper than vanadium.

Mr. Y: I do not know how long this vanadium will last, but if you take care of it and do not get it dented up it will last a long time. So far it looks very encouraging to us and it has saved us money; there is no question about that. Of course, if you get a dent it is like a bump on a car; even if you have it smoothed out some damage is done, and it will begin to rust.

Question: Do you think speed has any effect on blanket life, or would you be prepared to say?

Mr. Y: That would be hard to say. Of course, as I pointed out, our yarn is 50-50 acetate and viscose. The abrasion of the yarn itself in synthetics has a terrific effect on the blankets. The only experience I have had is on the 50-50 yarn. It will not operate on 100 per cent acetate, I can tell you that, without damaging the yarn.

Chairman Estes: Let's go to the next question: "What advantage is there in synthetic-covered squeeze rolls?"

Mr. Z: We use them on the back roll.

Chairman Estes: Do you run a blanket on top of your synthetic roll, or do you run it naked?

Mr. Z: We run it naked. We tried the blanket on top, but it slipped. Of course, we use the synthetic roll only on the back.

Chairman Estes: Have you tried running synthetic rolls both front and back?

Mr. Z: Yes, we find we get better dressing by using just the one in the back, and also better speed out of the slasher. We use one synthetic roll instead of two.

Question: Do you find that by using a synthetic-covered roll without any boot on it you get less shed on the slasher?

Mr. Z: I would not think so.

Chairman Estes: The last question under slashing is: "What weight squeeze rolls do you run?" How about some answers on cotton?

Mr. Z: We use 500 pounds and 600—500 on cotton and 600 on visocse.

Chairman Estes: What are the weights of your rolls?

Mr. C: 500 and 700. We use them only on the front roll.

Mr. Y: How do you predetermine the pressure that you exert in adjusting it? Is it hydraulic?

Mr. C: No, just mechanical.

Mr. Y: There is one that is hydraulic, is there not?

Mr. C: Oh, yes, there are a dozen different kinds. Now, for example, the size box may be inadequate for the task. I understand Saco-Lowell is coming out with a new one which is much better. Thn you may have to have new controls on your beam, also a pressure regulator. I have seen both the pneumatic and the screw type. They all seem to do well.

Chairman Estes: We bought these pressure regulators and when running different sizes, and so forth, it was very simple to put one on or take it off.

Weaving Discussion

We will now go into the weaving discussion. The first question is: "What system do you use for quality control?" You have not to have a system; I don't care whether you are running a peanut stand or a cotton mill or a steel industry, you have to have a system to be successful; and if you do not have a system for quality control I am afraid you do not have much quality. I should like to get several reports on this.

Mr. X: Well, our quality control, I would say, would begin, of course, with the yarn. Of course, when they are grading the cloth they make out tickets. Those go back to the weave room immediately, and that gives us as early a check on that particular loom as it is possible to give. That is one phase of it. Then we have all our supervisors check for quality, of course, as is done everywhere; but our particular way is interesting to me. We keep the cloth in folds; in other words, fold the cloth in the weave room; and then all seconds are placed back. Each supervisor comes out and has a record of the seconds; and he goes to the cloth with the weaver concerned and the fixer concerned, if necessary, which gives very good, up-to-date control there because they see all of the cloth they have made that is bad.

That would cover our weaving quality-control. Of course, you have an incentive there in the fact that the weaver who makes good cloth gets more pay.

Chairman Estes: A sort of bonus?

Mr. X: Yes. That also includes the fixers.

Chairman Estes: Do you have an incentive for the fixers, too?

Mr. X: No, just the weavers. Then another report goes out. The fixers have a double check on those looms that are bad, and we get a very quick check on the looms that are making seconds.

Chairman Estes: Does the cloth room notify you immediately when the inspector has a piece of cloth on a frame or table and it has a misdraw? Does the inspector notify the weave room immediately?

Mr. X: In a situation of something like a misdraw they would note it on their slip. We have a boy (and this I think is a good thing) who re-checks seconds. He would go right out to the loom in that case. It depends on what cut it is. If it is the first cut he would go out and tell the supervisor that there is a misdraw. There is one thing which I think is an advantage, and that is this re-check of our seconds. You know in some places the weave room has the final say-so. But we look at the cloth, and each second that they lay aside is carefully checked regarding defects and so forth. In that way you get a double check on your seconds and a double check on the control of quality, which has been very helpful to us.

Chairman Estes: Say you are running three shifts and the seconds were made on the third shift, would you show that cloth to the third-shift man only?

Mr. X: The first-shift man sees his seconds; the second-shift man sees his; and the third-shift man sees his.

Chairman Estes: Suppose the cloth was perfect on the first and second shifts and the third shift came along and made a lot of defects. Then that cloth would be shown only to the third-shift weaver?

Mr. X: That is right.

Mr. Z: There is one thing that is helpful, especially in new styles. We hang up by the loom a repeat board and put on there that the first shift got 40 yards, say, turned back. That may be repeated on the second and third shifts. We take drastic methods to cut that down. We also keep a graph of all our styles, and any time there is trouble we can take the overseers down and show them exactly what is causing the trouble. It may be in the preparation or may be in the weaving.

Mr. Y: We are weaving on a cut basis, with an average weaving time of about 18 to 24 hours for a cut. I go for systems a whole lot myself; I have always believed in them. I have maintenance broken down into two categories, I guess you would call it—preventive maintenance and corrective. In other words, we try to keep things from happening, and if they do happen we try like hell to keep them from happening again. We concentrate a whole lot on preventive maintenance.

The looms we have are of two types. We have the XD 64-inch Draper, and we have the C. & K. W-3 convertibles. We are running fancy work on the W-3s and plain and dobby work on the Drapers. Every loom in the mill is set up on very strict settings. I have a bunch of gauges that we had made up, made all on one stick. It gives the basic loom settings, and we work from

that almost entirely—that is, for the heavier motions on the looms. We use the gauges given us by the manufacturers for the lighter motions.

Getting back to starting the loom on a new warp or new style, we will make the graphs for the pattern change or box change available to the fixers or supervisors, and they will set up the looms. We have a schedule check which involves the major portions of the loom, which the loom fixer goes over in starting the loom up. It includes the let-off and take-up and shuttle and other major motions on the loom. That is bound in plastic, so it will not get dirty. The supervisor has one, and also the fixer. The supervisor goes over it. The smash hand, who smashes the loom just before it starts, goes over it; and she will initial it and put on a card, "This is new warp," and put her okay on it. In other words, we try to segregate the responsibility. They start that loom up, and on the second shift the second hand for that shift will give it the same checking. The smash hand for each block of looms is responsible for checking the draw pattern. As they are running she will make an inspection with a magnifying glass, of the lighted or unlighted type. She will go around and check each piece of goods and note that she has checked it and initial each piece of goods she has checked. That is the preventive maintenance we have there.

Our corrective maintenance follows a program like this. Our cloth room inspects the cloth, and if the grader finds the cloth defective a grading slip is made up, with the imperfections on it; and it is sent to the weave room as soon as possible. In other words, we do not make individual trips, because our cloth room is not located in the mill; but we make several trips during each shift. That grading slip is turned over in the weave room to the supervisor, who in turn gives it to the fixer; and the fixer will check the loom over again completely to try to ascertain the trouble and correct it. At the end of the shift a compiled report of imperfections by loom numbers, cause, and what have you is sent to the weave room. At that time the supervisor makes up a list of the looms in duplicate, showing the number of yards in seconds that we expected from a certain loom and the cause of it, and he gives that slip showing the number of yards of seconds and the cause to the fixer on that section and retains a duplicate copy of it. On that shift the list will show the imperfections on the two previous shifts. That gives a follow-up of two shifts on any loom reported for imperfections. He will follow up his regular routine check with the fixer on those imperfections for the two following shifts. At the same time we have what is called a loom layout sheet which we post at the loom, with the imperfections and the coded cause. In other words, each imperfection has a code number. We put the yardage down in color, a different color for each shift, and put down the number of yards in that color and the cause, so everybody there can see it and know the cause. We will check that loom continuously until we get a report back of a good cut of cloth. In other words, something might happen that our cloth room is a little bit behind the weave room, and there might be a half cut of cloth on the loom when the report was received. In other words, I can go in the weave room and tell exactly when a notice was received of the imperfection and know how many yards were woven after they were notified.

Mr. G: Suppose the loom fixer gets a report back that three looms are definitely bad. Do you stop those looms immediately, or do you keep on weaving?

Mr. Y: No, we stop those looms off immediately. The supervisor gets a report from the weave room, you see; and he stops the loom off immediately and asks the fixer to fix it.

Mr. G: Suppose there is cloth off in shade. Does the cloth room have authority to close down those looms?

Mr. Y: Oh, no. The authority is entirely with the weave room. Every morning I look at every cut of cloth that was condemned the previous day, with the cloth room supervisor. Then we show it to the immediate supervisor and fixer concerned and to the weaver. If a cut of cloth has 15 yards of bad cloth in the middle and a cut of, say, 100 yards on each side we do not cut it until it is finished.

Mr. G: What I had in mind was this. Do you say it rests between you and the cloth room man as to whether the cloth is running satisfactorily?

Mr. Y: That is right.

Mr. G: What about the quality-control department?

Mr. Y: We do not have a separate quality-control department. It is controlled by the weave room.

Mr. Z: We do about the same thing he does. The quality control department brings it to our attention, and then we take it up with the weave room.

Mr. Y: We do not have any system of paying a bonus for quality.

Mr. Z: There is one thing you pointed out a while ago. You said this smash hand inspects every new warp?

Mr. Y: That is right; one every shift. Then, again, you get into the physical layout of the plant. We are weaving fabrics for outerwear and suitings. Naturally, the job itself is big. We have only 314 looms in two weave rooms in two separate mills. You have to fit the program to your physical layout. I am speaking of my layout there. Our layout is conducive to a system like this. If you have 2,000 looms naturally you would have to change the system. In a small room one of our biggest problems is fitting the job activities in. In other words, there is not enough of one thing to keep one operator busy, and we have combination jobs. In suitings, where you do not get any too big a job and the number of looms is not too great, you have the problem of tying in the jobs together.

Mr. Z: We hold our weavers responsible for everything.

Mr. Y: We do, too. We try to give them every assistance we can, but they are not relieved of responsibility at all. Their responsibility is a sort of bad-faith proposition.

Mr. H: I believe you said you did not cut out any defective cloth until it is finished?

Mr. Y: No, not unless it is a bad defect, a thin place or holes or something like that.

Mr. H: Where a singer burned it?

Mr. Y: Yes, where a singer burned it or it is thin we cut it.

Mr. Z: One thing our weavers do, they inspect the cloth three times a day with a light, and where they inspect it they initial it. Also, the fixer inspects it.

Mr. C: We make window shade cloth. Of course, that is practically premium print cloth. We have close to 3,000 looms on it. We can not give it the close supervision you boys give yours, but I will try to give you a summary of what we do. When the cloth leaves the loom it is marked with the loom number and the name of the man who took it off. It has to come off in long cuts. They want long rolls. If we can make it 2,000 yards long that would be fine. Of course, we can not make them that long. As it goes to the cloth room it is passed through a shearer, where it is sheared, and it is combined into a roll that might have 2,500 yards. Then it is carried from there and put on the inspector's machine. It passes over an inclined table which is all glass, painted black on the under side, with a good light overhead. As it passes over the girl starts the yardage counter. Anything less than 150

Pictured at *left* is a portion of the group which attend the Fall meeting of the Southern Textile Association's Piedmont Division. In the *center* is Marshall Rhyne, chairman of the division, and at *right* are the five mill men who took part in a panel discussion on carding, spinning and winding.

yards in length goes into No. 2. The major defects we tear out. We can not tolerate a major defect such as a tear or an oil spot or anything like that; it is torn out. Anything below a certain length automatically goes into the seconds. We allow ten minor defects per cut. As the cloth goes over the table the girl marks a line there for each defect, no matter how slight it is. It might be a small amount of jerking-in or a small amount of twisting-in or kinky filling. Each defect is marked. We run various constructions. Most of our work is on shade cloth, and it is given shade-cloth weaving. The weaver does not know what that cloth is going to be until the cloth leaves the loom. If we know it is going to go into print cloth we give it print-cloth grading; if shade cloth, shade cloth grading. What cloth comes off the loom on Monday will be run on Tuesday, and the weave room will be notified of any bad cloth they make by late Tuesday afternoon or early Wednesday. That is about as close as we can keep up with it. I am notified of the seconds that come out of each mill each day. We have only one cloth room for the mills; basically, they are all one mill. At the end of the week the figures are compiled. It gives me a good knowledge of what is being done, and the second hands and others have an exact knowledge of how much cloth goes into seconds.

Chairman Estes: The next question is "What causes excessive picker-stick breakage?"

Mr. X: One thing we have run into is the picker stick breaking and the boxes hanging. We have worked at it and have improved it somewhat. That did cause us some trouble for a while.

Chairman Estes: Do you find that when you have one particular loom that you can not do anything with maybe the stroke is not exactly right on it, causing it to break?

Mr. X: We did have that. It could have too much stroke on the spindle end and too much on the box end and could cause that picker stick breakage.

Mr. Y: We have W-3 convertibles that we are running two by one on some plain work. At one time I was running a small picker rod, and we had a lot of breakage from hanging boxes—picker-rod breakage. They would hang and, naturally, cause the sticks to break. I have not gotten out of that entirely. With the high cost of gears we more or less try to keep it so that we do get some picker stick breakage on our box end. I do not know whether that is a good plan of operation or not. We keep a hickory stick on the box end, and our breakage has dropped somewhat. One thing, too, I am a believer in running a dry picker rod. We run a dry picker rod, synthetic reversible drop-box picker. You can get different things, of course, but I think it depends more or less on what you run. Checking on those things and getting a good box motion, not hanging, I think will eliminate a lot of breakage there.

Chairman Estes: Let's go to Question No. 4: "Do you shellac and tallow your shuttles? How often?" If you use shellac and tallow, do you apply them at certain regular times?

Mr. I: We do not. We shellac them and tallow them as needed.

Chairman Estes: How about you, Mr. J?

Mr. J: Old English wax is the best thing we have found. We put it on there and shine it up; get a good coating on there. It is better than shellac. We use Old English wood wax paste.

Chairman Estes: Do you do that periodically, or as you think it needs it?

Mr. J: The weaver does it every day; he goes over a certain number. It will not accumulate on the shuttle. If it does, you can take a rag and wipe it off. You do not have to go over these shuttles and sand them or use emery cloth or anything like that. If you take a magnifying glass and look at an old shuttle you will see that emery cloth pits it. This Old English wax is the best protection for the shuttle.

Chairman Estes: Next question: "Do you keep a record of when your new shuttles are put in?"

Mr. J: Yes, sir, we do.

Chairman Estes: The last question is: "Do you align your boxes with a long straight edge before putting in new shuttles?" Do you use the long straight edge?

Mr. J: No.

Chairman Estes: You use the shorter shuttles?

Mr. J: Yes, sir. In connection with using this wax, you find that on the week-end you can start up much better, due to the fact that it holds the moisture in and heat does not affect your starting up. You do not have bouncing and so on.

Chairman Estes: Do you pull your shuttles out on the week-ends?

Mr. J: No.

Mr. Z: No, sir. We start a little early, maybe 35 or 45 minutes early, and do not have any trouble.

Chairman Estes: You do not experience any bouncing? Do you leave your shuttles in or pull them out, Mr. Y?

Mr. Y: We pull them about halfway out, just clear of the shed.

Mr. Z: Don't you get marks?

Mr. Y: We get them anyway. Don't you get them on synthetics?

Mr. J: We get them occasionally. We did a lot of study on that, to get away from them.

SO YOU WANT GOOD CLOTH!

By FRANK D. HERRING

Part 32 – Breakouts

WHEN a portion of the warp threads are broken out, while the loom is in operation, we refer to this as a breakout or a smash. A breakout is an irreparable imperfection because it constitutes a hole in the cloth, so, the cloth must be cut and this creates short lengths and seconds. There are many things which cause breakouts, such as broken harness eyes, broken harness rods or ribs, big knots and gouts in the warp yarn, etc., but as most of these do not come under the jurisdiction of the loom fixers responsibilities I will not undertake to cover them. Most of the really damaging breakouts are caused by the shuttle and improperly transferred filling bobbins, and these are the loom fixer's responsibilities, because they are caused by excessively worn or improperly adjusted parts of the loom.

To stop shuttle breakouts, or smashes, proceed as follows and check the things mentioned in the order named.

(1) The back box plates and the back binders. Sometimes the back box plate cap screw will come loose and cause the back binder to bind and fail to drop back in place when the shuttle is delivered from the shuttle box on the pick, and this will prevent the protector rod daggers from contacting the frog steels and stop the loom off in case the shuttle becomes trapped between the warp sheds, resulting in a shuttle breakout. The back binder spring should also be checked to determine if it is working free and properly adjusted, and tight.

(2) The rocker shaft and rocker shaft bearings. If there is excessive lost motion in the rocker shaft and bearings it will allow the protector rod daggers to rise, when the loom slams off, and slide over the frog steels and trap the shuttle between the warp sheds and cause a shuttle breakout. Also, excessive lost motion in the rocker shaft makes

it impossible to make, and maintain, the proper adjustments on the protector rod daggers and many other parts of the loom.

(3) The protector rods and protector rod fingers. Excessive lost motion in the protector rods and bearings makes it impossible to make, and maintain, the proper setting on the protector rod daggers in relation to the frogs and frog steels, and unless these settings are maintained shuttle breakouts will result. The protector rods should work free of any binding whatsoever, and a reasonably tight protector rod spring should be maintained in order to insure instant action of the protector rod daggers when the shuttle leaves the shuttle box on the pick. If the protector rod spring is too slack the protector rod daggers will have a tendency to bounce or rebound when they drop down in place and this will sometimes allow the daggers to slip over the frog steels and trap the shuttle between the warp sheds and make a breakout. If the points of the protector rod daggers are excessively worn, rounded off, they should be replaced because this will allow the daggers to slip over the frog steels and trap the shuttle. Improper adjustment of the protector rod fingers will sometimes cause the daggers to contact the frog steels at too high a point and allow the daggers to slip over the steels resulting in trapped shuttle and breakouts. Check the frog steels to determine if they are in good condition. If they are chipped or rounded off the same trouble as mentioned above will result.

(4) Position the lay. The frogs are equipped with rubber packing at the point of contact with the spur on the loom side, which hold them in place, which acts as shock absorbers when the loom slams off. This rubber packing will hold the frogs far enough back, and stop the lay in a safe position to prevent a breakout as long as the packing is in good condition, but after the loom has been in operation for a few years this rubber packing will crumble and wear away and allow the lay to come far enough forward to make a breakout when the shuttle is trapped between the sheds when the loom slams off. To check and correct this condition proceed as follows: turn the lay forward from bottom center position until the protector rod daggers are in tight contact with the frog steels, then brake the loom in this position and measure the distance from the fel or beat of the cloth back to the reed. The distance from these two points should be the over-all width of the shuttle, plus one-half to five-eighths of an inch. It is very often necessary to replace the worn rubbers with new ones to obtain this clearance between the fel and the reed. Incidentally, both frogs should be rigidly tight when the daggers are in contact with the frog steels, if they are not it would indicate that the lay is not properly positioned on its forward movement on both ends, and if this is found to be the case it should be corrected by replacing a worn crank arm, or by adjusting the eccentric pin in the sword. With a few exceptions, most of the checking and adjusting of parts can best be made on a loom when there is no warp on it.

The loom fixer's excuse for not checking over his looms while the warp is out is that he does not have the time to do this work and keep the flags down on his section, and in most cases this is true. The reason this is the case is the fact that he has too many looms flagged, and the primary reason for having too many flags is because the looms are not checked over and the bolts and screws tightened, and necessary adjustments made, and excessively worn parts replaced while the warp is out. The overseer of weaving who adopts this rule and follows it up religiously will soon learn that he is running his job more efficiently in every respect, production, quality, cost, and much better satisfied weavers and loom fixers. But in order to make the above rule of procedure work out satisfactorily, it *must* be followed through on every shift of operation. When first starting this rule it can be expected that most of the fixers will complain about having more than they can do, and this might be the case until his section has been checked and worked over, and it might be necessary to give them some help until they get over their sections, but once they get over they will be glad to continue this work without any help because they will not need any help, and they will realize that they are running their jobs much easier than before.

Bobbin Breakouts

Bobbin breakouts are made when the transfer mechanism fails to place the ingoing bobbin into the shuttle properly and the bobbin becomes trapped in the shuttle and is carried out by the shuttle between the warp sheds and breaks a portion of the warp yarn. This does not mean that the transfer mechanism is always out of adjustment, but very often some of the many related parts being out of adjustment will be directly responsible for the transfer parts failing to function as they should.

I mention these facts because I know from my own experience with many loom fixers that most of them will go to a loom to work on it for bobbin breakouts and do nothing but put the shuttle in battery end and turn the crank shaft, by hand, to place the lay on front center position with the transfer hammer down and check the hammer for depth in relation to the bobbin shuttle, and then make some adjustment on the hammer and start the loom and leave it. This is not good loom fixing because a number of things can affect the depth of the transferrer or transfer hammer when the loom is in operation that will not show up when the crank shaft is turned by hand.

If a loom is properly checked and the necessary adjustments made to stop bobbin breakouts, many other troubles such as broken bobbins, bobbins thrown on floor, filling breakage on transfer, broken shuttles, broken front and back box plates, and sometimes broken hopper stands will be corrected. To stop bobbin breakouts check the following things in the order named.

(1) The shuttle. As the bobbin is contained in the shuttle, it should first be determined if the shuttle is in good condition. Check the shuttle spring to see if it grips and holds the bobbin firmly. If the spring is too weak or excessively worn it should be replaced with a new one, as it is bad policy to bend the spring to make it grip the bobbin rings more firmly, because if the spring is bent in too much it will interfere with the transfer of the bobbin and cause breakouts, and also if the spring is bent either way, in or out, it will soon conform itself back to its original shape. Make sure that the bobbin is gripped tight by the spring and lined perfectly straight.

(2) The rocker shaft. Excessive lost motion in the rocker shaft will allow the lay to rise sometimes when it is on front center position and this will interfere with the orderly transfer of the bobbin into the shuttle and will cause the bobbin to be trapped and carried into the warp sheds and

make bobbin breakouts. While checking the rocker shaft, the rocker collars, the swords, and the parallels should be tightened, because if these parts are not tight and in place the lay will move out of position and the shuttle, which is contained by lay parts, will not be in proper position to receive the bobbin when transfer is made and a trapped bobbin and breakout will result.

(3) Box the shuttle. Put the loom in operation and see that the shuttle is boxing properly in both shuttle boxes. If the shuttle is not boxing correctly it will interfere with the orderly transfer of the bobbin, and breakouts will result.

(4) The crank arms. Remove all lost motion from the crank arms because lost motion will cause the extreme front center position of the lay to vary and this will cause the extreme downward stroke of the transfer hammer to vary, and this will interfere with the transfer of the bobbin into the shuttle and cause the bobbin to become trapped and make breakouts.

(5) The breast beam. The battery, which contains the filling bobbins, is mounted on the breast beam and of course it is absolutely necessary for the breast beam to be in place and rigidly tight. The breast beam is held in place by bolts and also dowel pins, and when the loom is allowed to run with these loose the dowel pins and dowel pin holes will become worn, and in this event it is necessary to drill the holes larger and put in larger dowel pins or drill new holes for the regulation dowel pins.

(6) Gauge the battery. All Draper looms come from the loom builders with the batteries gauged, but very often after the looms are put in operation at the mill the battery or hopper stand will become broken and replaced by the loom fixer without gauging and putting them back on in the proper place. When this is done it is impossible to get satisfactory results from the transfer mechanism and the thread cutting devices, because these various parts are designed and made to operate within certain radiuses in relation to the lay, and these parts cannot be adjusted to function properly unless the battery is properly gauged.

(7) The bunter. The bunter is attached to the lay and is the piece which makes contact with the latch finger and actuates the movements of the transfer mechanism when transfer of bobbin is made. The bunter is held in place by two bolts, and it is vitally important to make sure that these bolts are tight at all times because if they become just slightly loose the bunter will be depressed enough to prevent the transfer from delivering the bobbin a sufficient depth into the shuttle, and this will cause trapped bobbins and breakouts.

(8) Transfer mechanism. (This consists of the shuttle feeler, latch depressor, latch stand, latch finger, transfer hammer, transfer fork, bobbin guide, and bobbin support). First, turn the crank shaft to place the lay on extreme front center position, with shuttle in battery end and an empty bobbin in shuttle, press the transfer hammer down, by hand, until it contacts the rings on the bobbin and check the clearance between the back part of the hammer and the inside back wall of the shuttle. This clearance should be about one-eighth of an inch. With the hammer still pressed down, see that the transfer fork is lined with the bobbin in the shuttle. It is sometimes necessary to bend the fork slightly to obtain this alignment. Also, with the hammer still down, bend the transfer fork, if needed, up to a point where there will be about one inch clearance between the small end of the bobbin and the outer end of the fork. In other words, there should be one inch play, upward, between the end of the bobbin in the shuttle when the transfer hammer is in contact with the rings on the bobbin.

The one-eighth inch clearance between the inside back wall of the shuttle and the transfer hammer is obtained by turning the eccentric pin in the sword on battery end of loom. Turn the lay back to bottom center position and hold the latch finger up, by hand, and move the lay forward until the bunter contacts the finger then turn the lay on to front center position and adjust the transfer hammer in relation to the rings on the bobbin in the shuttle. There should be about one-eighth inch clearance between them. Turn the lay back to bottom center and raise the latch finger, by hand, and then move the lay forward until the latch finger just contacts the bunter, brake the loom in this position and set the shuttle feeler. With the lay in this position, the shuttle feeler bracket should be adjusted to a point where the tip end of feeler will clear the smooth face of the back box plate about one-quarter of an inch and clear the front part of the lay end plate one-eighth inch.

This job can be done much better and easier by unhooking the starting rod spring and holding the shuttle feeler up in place against the stop on the shuttle feeler bracket by hand.

With the lay still in same position, bunter contacting the latch finger, adjust the latch depressor to a point where the top end will clear the front box plate one-quarter of an inch. Then, move the lay to front center position and check to see if the shuttle feeler is free from binding. With the above setting there should not be any binding on the shuttle feeler or the latch finger. If there should be binding, it would indicate that some parts of the mechanism are not made for the model loom you are using. Some of these parts are different on the different model looms. If trouble is encountered here it would be wise to call in one of the service men.

If the shuttle feeler and latch depressor binds when the lay is on front center it will cause the depth of the transfer hammer to vary when it is in down position on the transfer, and this will cause a bobbin to be trapped occasionally and make a breakout. Turn the lay to bottom center, with the transfer hammer up in rest position, and place an empty bobbin in the battery and turn the bobbin disc until the rings on the bobbin contact the bobbin guide and check to see if the bobbin in battery is in line with the transfer fork. If it is not in line the small end bobbin disc should be adjusted to make the alignment. (We have already lined the transfer fork with the bobbin in the shuttle, so, the above adjustment will put the bobbin in shuttle, the bobbin in battery, and the transfer fork all in line as they should be). Then check to see if the rings in the bobbin in the battery are in line with the grooves in the bobbin guide. If the rings do not line up with the grooves, it would indicate that the bobbin disc or the bobbin disc stud is excessively worn. This condition can usually be corrected by replacing the stud, but it is sometimes necessary to replace the stud in the disc. Check the bobbin support and make sure that the support lip is not high enough to contact rings on the bobbins in the battery when the bobbin disc rotates after a transfer. Also, if the lip is excessively worn the support should be replaced.

SURFACE-ACTIVE AGENTS

By DR. J. LUTHY, Sandoz Chemical Works, Inc.

THE history of surface-active agents begins with the discovery of soap which has now been in use for over 2,000 years. Next we find that sulfonated vegetable oils were discovered and introduced to the textile industry where they found a ready market in the latter part of the 19th Century. World War I and the resulting encirclement of Germany, causing shortages of animal and vegetable fats, forced German chemists into the development of alkyl naphthalene sulfonates. Although these were poor substitutes for soap as far as over-all performance was concerned, they did have three major advantages, i.e.,—they were not affected by hard water, they worked under acidic conditions and were far superior wetting agents. These three qualities, plus the normal desire to be independent of natural sources, kept these synthetics on the market and encouraged further research. Another discovery was the sodium salts of higher alcohol sulfates, known as early as 1836, but never recognized for their practical value as detergents until 1930.

By the beginning of World War II a new industry had been definitely established. Intensive research and a constant demand for better and cheaper surface-active agents led to an amazing development over the next few years. In 1945 total production in the U. S. was estimated at 92,000,000 pounds (100 per cent active material). In 1948 it had increased to 350,000,000 pounds, and during the first nine months of 1949 the 500,000,000-pound mark had been passed.

Despite this, the production of soap has remained high, almost ten times higher than all other surface-active agents combined, which proves the well-known fact that soap has qualities which are hard to match with modern synthetics. In only a few applications has soap been replaced; in others the use of soap has been expanded by an admixture with synthetic surface-active compounds. Some entirely new fields have been opened by synthetics where soap could never be used due to certain deficiencies.

Definition

Surface-active agents have been defined as solutes, which have the remarkable property of lowering the surface energy of their solutions to an extreme degree, even if present only in very small amounts.

In operations like wetting, scouring, penetration, emulsification, etc., where different materials have to be brought into contact with one another, it is obvious that the behavior of the boundaries is of fundamental importance. In case of contact between two liquids, or a liquid and a solid we call the boundary zone an interface. If a liquid or a solid is in contact with a gas, we ignore the fact that two phases are involved, and speak of a surface.

Now let us consider the surface of a liquid in equilibrium with its vapor phase. We know that all similar molecules exert a force of attraction upon one another. A single molecule, somewhere in the bulk of the liquid, is attracted by all its neighboring molecules. It can be readily seen that these forces of attraction, coming evenly from all directions, will balance themselves so the resultant force is zero.

On the other hand, a molecule on or near the surface is subjected to a highly unbalanced field of forces. On the liquid side the attractive forces of all the other molecules are as strong as in the interior. On the vapor side there in only a negligible force exerted by a few widely scattered gas molecules. The over-all result is a pull toward the interior. The molecules want to leave the surface, thereby imparting to the liquid a tendency to reduce its surface and to assume a shape covering the smallest possible area.

This contractive force, by which a liquid tends to assume a spherical shape, is mathematically equivalent to a tension. We call it *surface-tension* and measure it in dynes per centimeter. The surface tension of distilled water at room temperature is about 72 dynes per centimeter. An 0.1 per cent sodium oleat-soap solution has a surface tension of 25 dynes per centimeter. For a 0.1 per cent solution, a surface tension of 30-35 dynes per centimeter is considered good, below this excellent, above 40 poor.

Similar considerations allow us to understand the behavior of an interface between two mutually insoluble liquids. A molecule on or near the interface is attracted by molecules of both phases. Due to the different power of attraction characteristic of the two species of molecules, the forces of attraction will be stronger from one phase than from the other. The result is a force which tends to contract the interface. The same is true of an interface between a liquid and a solid. This force again is equivalent to a tension which we call *interfacial tension*. It is also measured in dynes per centimeter. The interfacial tension of aqueous solutions is usually measured against Nujol, a purified grade of mineral oil.

In general, the attractive forces between two liquids will be greater than between a liquid and a gas, simply because of the greater number of attracting molecules per unit volume in a liquid as compared to a gas. Accordingly, the interfacial tension between two liquids is always lower than the surface tension of the liquid with higher tension. Thus, the surface tensions of water and benzene against air are 72 and 27 dynes per centimeter, while the interfacial tension between benzene and water is 35 dynes per centi-

meter. By addition of a well-known chosen surface-active it can be lowered to values near zero.

If we have two liquids consisting of molecules "A" and "B," it is evident that they can exist in two separate phases only if the attraction of "A" for "B" is smaller than the attraction of the molecules "A" for one another and the molecules "B" for each other. If the "A"-"B" attraction becomes equal or greater than "A"-"A" or "B"-"B," the two liquids will be mutually miscible. This would correspond to a negative or zero interfacial tension.

The stronger the attractive forces between two liquids, the lower the interfacial tension. Therefore, we associate low interfacial tension with high adhesion between two phases. Oil and water do not mix, but if we add an emulsifier, which lowers the interfacial tension far enough, they will finally emulsify. The formation of an emulsion enormously increases the interfacial area. This must be done against the interfacial forces. If we reduce them, emulsification will become easier. For the same reason, the tendency of the emulsion to separate will be reduced.

The ability of surface-active agents to reduce surface and interfacial tensions can be explained by their characteristic structure. Surface-active molecules are large and consist always of two distinct parts. One part is oil-soluble, lipophilic, water-repellent, hydrophobic. The other portion is water-soluble, hydrophilic. By intimate chemical reaction the two normally antagonistic parts are solidly bound together, each exercising its natural function, while holding the other in check. Thus, the hydrophilic part renders the molecule water-soluble or at least dispersible. If we dissolve such a compound in water, the water molecules will tend to expel the hydrophobic parts by driving the surface-active molecules to the faces. This movement is counteracting the tendency of the water molecules to leave the faces and therefore results in a lowering of the facial tensions.

It is not surprising that there is scarcely an operation in the field of textile processing which cannot be improved or expedited by the proper use of surface-tension control. The application of surface-active agents makes it possible to emulsify oil and water, to disperse solids and to keep them in suspension, to make a liquid spread rapidly over a surface which normally is difficult to wet, to increase speed and depth of penetration and to produce and to inhibit foam.

According to their functions, we speak of wetting, spreading, penetrating, leveling, dispersing, foaming or anti-foaming agents, detergents and emulsifiers. Also there are large groups of true surface-active agents which are not used because of their surface-activity, but by virtue of quite different properties, like softeners, fixing agents for direct colors, and others.

It is well to remember that the theory of surface-active agents involves many considerations which have nothing to do with interfacial phenomena. Surface-active compounds form peculiar kinds of colloidal solutions which are quite different in physical and electrical behavior from regular solutions. These anomalies are due to the formation of large aggregates of molecules known as micelles. The study of these properties constitutes another large part of the physical chemistry of surface-active agents.

The balance between the lipophilic and the hydrophilic portions of a molecule is of fundamental importance for the behavior of surface-active agents. Through variation of the chemical structure we are able to produce compounds suitable for one or more specific applications. A slight modification can convert a detergent into an excellent wetting-agent with poor detergency.

The hydrophilic and lipophilic parts can either be linked directly or through an intermediate linkage. A linkage which is unstable under certain conditions will affect the stability of the molecule as a whole. Sometimes we may want the product to decompose at a certain point of the operation. In this case, an unstable linkage is desired, but obviously it is useless for applications requiring stability.

Classification of Surface-Active Agents

From the chemical point of view, surface-active agents are classified as *ionics* and *nonionics*. The ionic types are either *anionic* or *cationic*, depending upon whether the characteristically surface-active part is contained in the anion or in the cation.

Sodium chloride, like all salts, dissociates in aqueous solution into positively charged sodium ions and negatively charged chlorine ions. The positive ions are called cations, the negative anions. Thus, in the case of sodium chloride, sodium is the cation, chlorine the anion. Neither is surface-active.

Similarly a soap, like the sodium salt of stearic acid, partly dissociates or ionizes in aqueous solution into an anion and a cation. The anion being the surface-active part, we call soap an anionic surface-active agent. Likewise, other salts of carboxyacids, sulfonic acids or sulfonic esters are anionic.

On the other hand, we speak of a cationic surface-active agent if the active portion of the molecule is contained in the cation, i.e., in the positively charged part of the molecule. Due to the ionic character of anionic and cationic agents, they are sensitive to other ions. In the case of soap, the anion may unite with a calcium ion contained in hard water, forming an insoluble calcium salt which is no longer effective. Many other anionic surface-active agents also form calcium salts, but in some cases the calcium salt is soluble. Consequently, they are stable in hard water.

In an acidified soap solution, where free hydrogen ions are present, free *insoluble fatty acid* is formed. For similar reasons anionics are not compatible with cationics. The surface active anion of the former can combine with the surface-active cation of the latter, thus forming an insoluble large compound which is precipitated.

Contrary to anionic and cationics, the nonionics do not ionize in solution. While ionics depend on one or two strongly hydrophilic groups, the nonionics derive their solubility from an accumulation of weak nonionizing hydroxyl or ether-groups. Since they do not form ions in solution, they are stable in the presence of other ions and also do not affect them. Therefore, they are compatible with anionic and cationic agents, a property which makes them very interesting.

Anionic Agents

Fatty acids as such show some surface-activity. However, they do not have the proper lipophilic-hydrophilic balance to become really effective. The long hydrocarbon chain is too hydrophobic for the relatively small solubulizing power of the carboxy-group. We can increase the hydrophilic

properties of the carboxy-group by neutralizing it and forming a salt. The product is called "a soap" and is properly balanced.

A soap with a shorter, less hydrophobic chain, will be more soluble than a soap with a longer chain. Also solubility increases with rising temperature. Since surface-active agents are most efficient at a point where they just reach a definite degree of solubility, it is obvious that short-chain soaps will work better at low temperatures, while long-chain soaps are most effective in hot solutions.

The most important soap-forming fatty acids are the lauric up to stearic straight chain saturated acids and the oleic unsaturated acid. Cocoanut-oil contains a high percentage of lauric acid; tallow mostly stearic, palmitic and oleic acids. Changes in the hydrophilic portion also affect the solubility. Thus, potassium soaps are more soluble than sodium soaps. Instead of having the carboxy group linked directly to the hydrocarbon chain, an intermediate linkage can be introduced. An amide linkage immediately increases the lime resistance.

Sulfuric acid reacts with double bonds or hydroxyl groups to form sulfuric esters. Many natural oils contain double bonds, hydroxyl groups or both. The salts of their sulfation products have been in use for almost 100 years. A typical example is Turkey Red oil, a compound obtained by sulfation of castor oil.

Esters of unsaturated fatty acids (oleic) can be sulfated. They yield good wetting agents. The solubilizing group is attached to the middle of the lipophilic chain. The result is a molecule with two short lipophilic portions instead of one long one as in soap. It is the generally accepted theory that the molecule possessing the two short lipophilic portions is responsible for the strong wetting power of this type of compound. When a surface active compound dissolves in water the surface molecules are oriented so that their hydrophilic heads point toward the water and the hydrophilic tails away from it.

The practical value of wetting agents boils down to the fact that a much smaller quantity will bring about efficient wetting out, whereas if soap had to be used, much larger amounts would be needed, and, in many cases, soap would not reach the speed of wetting, even in excessively high amounts, that can be obtained with wetting out agents in quantities that are very economical. The practical values of these compounds in the textile industry amount to the following: saving of time; saving of steam, and ensurance of uniformity (a) in bleaching and (b) in dyeing. The saving of time is evident. The goods are wet out right away, processing can start sooner.

The saving of steam is even more striking. Without the use of a wetting agent it is necessary to employ hot water in order to bring about wetting of the goods prior to bleaching or dyeing. Complete wetting out takes place in the cold, therefore, no steam has to be used at all until the actual bleaching or dyeing processes are started. The uniformity is ensured by virtue of the fact that the compound not only wets the goods in a minimum of time, but also causes uniform wetting which is of great importance for the subsequent processing.

So far, we have dealt with wetting out properties in particular. When we consider detergents, new problems arise because such compounds not only have to lower the interfacial tension between solutions and fibers, but they must also attack impurities present in the fibers, emulsify them, and keep them in suspension. For detergency, compounds possessing straight-chain molecules have been found most suitable. They form something like an organic layer covering the water droplets. In this manner, they act like a solvent with effective grease removing properties.

Salts of sulfated alcohols account for 20 per cent of the detergent market in the United States. Long chain alcohols are available from natural waxes and oils, notably spermaceti and sperm oil.

Straight chain alcohols are also obtained by reduction of fatty acids. Depending on the chain-length of the acid, a variety of alcohols can be produced. Again the number of carbon atoms is of fundamental importance for the properties of the final product. Thus, a product based chiefly on lauryl alcohol is better in cold water, whereas a product made from stearyl alcohol is most effective in hot solutions.

Finally, alcohols are made synthetically from basic petroleum chemicals. Modern synthesis permits the manufacturer of tailor-made branched-chain alcohols which upon sulfonation yield excellent wetting agents.

The sulfonate group can be linked to the hydrocarbon chain by means of an intermediate linkage, i.e., an ester amide or ether-linkage. According to whatever linkage is used the stability of the product will be affected correspondingly. The weakest link always breaks. Acids will break the sulfonate linkage, while alkaline solutions tend to split the ester linkage.

This product is potentially one of the cheapest detergents. It is sold under the trade name VEL for household purposes. Since the housewife will hardly wash dishes in acids or alkalis, the low stability in such solutions is of no concern. On the other hand, foaming power and hard water stability are of vital importance.

Alkane Sulfonates

The sulfonated products described above contain a sulfate group, i.e., sulfur is linked to carbon by means of an oxygen bridge. They are obtained by sulfation. The word sulfonation is used for an operation yielding true sulfonic acids. Their salts are called sulfonates. Sulfur is linked directly to carbon.

Generally, true sulfonic acids are superior in stability to acid and alkali, therefore, it would be desirable to find an economical way of converting aliphatic hydrocarbons into true sulfonic acids. Unfortunately, this represents quite a problem. In spite of much research only two procedures are in commercial use today.

It is considerably easier to produce true sulfonic acids, if the sulfo-group is linked to the lipophilic by an intermediate linkage. This again can be an ester, amide or ether-linkage. Another important type of ester-linked sulfonic acid is represented by a combination possessing primarily wetting out properties. Here we find two ester linkages forming a branched molecule. Substitution of different alcohols yields a great variety of products.

Alkyl Aromatic Sulfonates

Aromatic ring structures like benzene, toluene or naphthalene, can easily be sulfonated to give true sulfonic acid. Since generally the aromatic ring as such is not quite lipophilic enough, it is first condensed with one or more aliphatic hydrocarbon chains. These chains vary in length. It seems obvious that naphthalene, which already contains

ten carbon atoms, requires a shorter aliphatic attachment to give proper balance, than benzene or toluene, which have only six and seven carbon atoms. Thus, naphthalene is usually substituted with one or two isopropyl or isobutyl-chains. Compounds of this nature are effective wetting-agents with good stability in acidic and alkaline solutions.

A small ring structure, such as benzene, with a single long aliphatic chain gives much better detergency. The most efficient detergents of this type are apparently obtained by sulfonation of dodecyl—benzene. Toluene is used more often because the alkylation reaction is easier to control, and because it is more available. These products are resistant to ten per cent acids and 15 per cent alkali up to boiling, but not quite so good as sulfated alcohols in hard water stability.

Cationic Agents

Cationic detergents have been called "invert soaps" because they differ from ordinary soaps in the sign of the charge carried by the surface-active part of the molecule.

Quaternary long-chain ammonium salts show good foaming power and are effective wetting agents and detergents. However, they would be too expensive for this purpose alone if they did not combine their washing properties with strong bactericidal power. This makes them useful as germicides, fungicides and disinfectants. After their effectiveness against micro-organisms had been discovered, an enormous amount of quaternary ammonium salts was synthesized.

The durable water-repellents constitute another group of quaternary ammonium salts, but it would lead us too far to describe these in detail here.

Another application of quaternary ammonium salts is their use as fixing agents for direct dyes. During the dyeing process direct dyestuffs are absorbed by the fibers until an equilibrium is reached between the dye on the cloth and the dye in the bath. If, afterwards, we destroy the balance by rinsing the cloth in pure water, the still soluble dyestuff will bleed out in order to restore the equilibrium. Most of these dyes are salts of aromatic sulfonic acids. Treatment with a quaternary ammonium salt after dyeing results in the formation of a large insoluble salt between the anion of the dyestuff and the cation of the fixing agent.

Besides quaternary ammonium salts also primary, secondary and tertiary amine salts are used as cationic surface-active agents. Contrary to the quaternary ammonium salts they are not soluble in alkaline solutions.

Nonionic Agents

Because of their outstanding compatibility with other compounds, the non-ionic surface-active agents have considerably gained in interest during the past few years. While the lipophilic part in nonionics remains essentially the same as in anionics or cationics, the solubilizing group is quite different. There are only a few configurations possible which are nonionic and at the same time hydrophilic. Only multiple hydroxyl groups or multiple oxygen-ether-linkages have been of practical value. Modern chemistry allows the introduction of a controlled number of these groups into a molecule, thereby imparting any desired degree of water solubility. Thus, it is possible to progressively add ethylene (propylene) oxide to a fatty acid, long chain alcohol, mercaptan, amine, amide, alkyl phenol, etc.

Each new molecule of ethylene oxide added makes the product more hydrophilic until finally it becomes soluble when about 12 or 15 ethylene-ether groups have been introduced. Well known commercial products of this type are made by addition of ethylene oxide to tertiary octyl phenol.

Since we can vary the length of the lipophilic chain and also the solubilizing power of the hydrophilic part, an amazing number of combinations is possible. Thus, today, nonionics can be "tailor-made" for any given specific application.

The polyethylene-glycols are available in a wide range of molecular weights up to 6,000. They can be condensed with fatty acids, yielding a great variety of products. Another type of nonionic agents is made from polyhydric alcohols or their anhydrides. This type of compound is oil-soluble and only dispersible in water. For certain applications such products are not hydrophilic enough. Then, ethylene-oxide is added to the remaining hydroxyl groups.

Also, fatty esters of polyglycerols give surface-active compounds. Furthermore, the Ninol type detergents made from fatty acids by condensation with two molecules of an alkylolamine have been called nonionic.

As stated before, the weakest link in the molecule will be responsible for the stability of the product. Thus, a product which contains the hydrophilic part linked by an ester-linkage will be fairly stable to dilute acids but hydrolizes rapidly in alkaline solutions. On the other hand, an ether product will be stable in acid and alkali.

Special Composition and Mixtures

A few words might be said about products used in conjunction with surface-active agents. Many alkaline salts such as the alkali metal carbonates,—phosphates, borates and silicates promote the detergent action of alkylaryl sulfonates, alcohol sulfates and even some of the nonionic detergents. These substances are called *builders*. If it is possible to replace a certain amount of a detergent with one of these inorganic salts without decreasing the detergency, then we have a true builder for this particular detergent.

While in "builder-action" only one component is surface-active. It is known that also two different surface-active agents can have similar influence upon each other. This is called *synergism*. Examples of synergism are quite commonly encountered in wetting and detergency. The term is applied when a mixture of two or more surface-active agents shows a greater efficiency than the sum of the effects of the two components used alone.

Alkyl aryl sufonates alone are generally inferior to soap in detergency. However, they can be improved considerably by proper building and combination with a well-chosen synergistic nonionic detergent. Finally, we can increase the soil suspending power with a colloidal additive like sodium carboxy-methyl cellolose. By blending these products, we can produce a detergent which is superior to soap at its best.

Much can be done to facilitate processing or improve the quality of the goods by chosing the right compound and by applying it under optimum conditions.

Dr. Luthy's paper is abstracted from a booklet published by Sandoz Chemical Works, 61 Van Dam Street, New York 13, N. Y., where the complete paper containing formulae and special mention of Sandoz products may be obtained.

Controlling Humidity & Temperature With Use Of Unit Air Conditioners

By LEO WALTER

IT IS well-known to the practical textile mill engineer that only combined humidity plus room temperature control ascertains best results in the spinning and weaving processes. The modern trend in controlled air treatment is to produce "packaged" smaller air conditioning units, similarly as the modern unit heater has replaced large central air heater batteries. It should, however, be pointed out, that a unit air conditioner is not merely a reduced version of a central air conditioning plant, although it may be composed of the same elements, such as air filter, pre-heater or cooler, air washer compartment, main heater or cooler and air dampers, etc.

Unit air conditioners can be suspended from the ceiling (Fig. 1-Z) in the shed itself, or they can be located in an adjacent room, from where the conditioned air is distributed by short air ducts, usually with special air diffusers for uni-

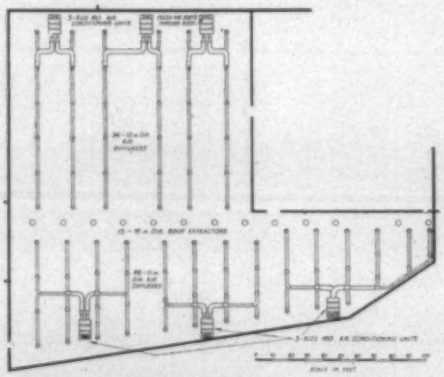


FIG. 1

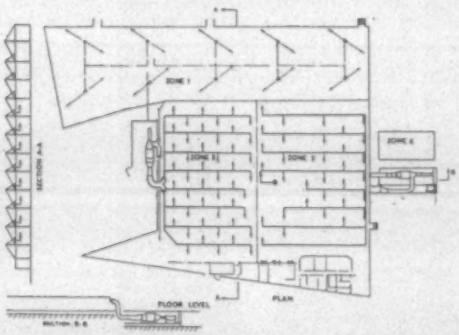
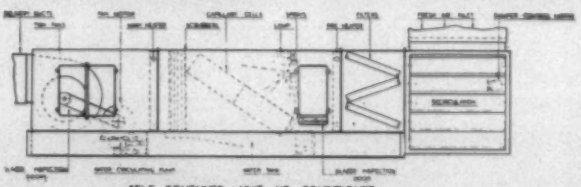


FIG. 4.



SELF CONTAINED UNIT AIR CONDITIONER

FIG. 1-A

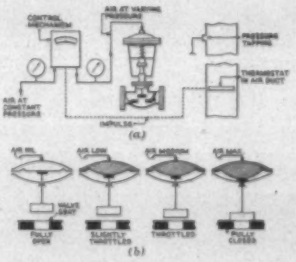


FIG 6-A

Fig. 1—Method of distributing conditioned air by short air ducts.
Fig. 1-A—Self-contained unit air conditioner.
Fig. 4—Zoned plant using larger conditioning units.
Fig. 6—Pneumatic air damper motor for actuating linked air dampers according to a pneumatic humidistat.
Fig. 6-A—How air pressure in the diaphram chamber of a pneumattic motor operates a control valve disc step by step.
Fig. 7—How variation of output pressures operates a control valve.

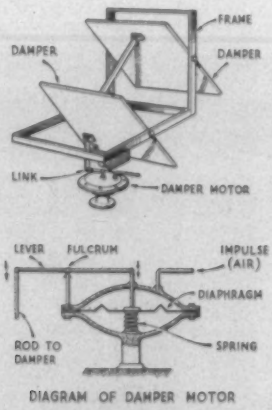


DIAGRAM OF DAMPER MOTOR

FIG. 6

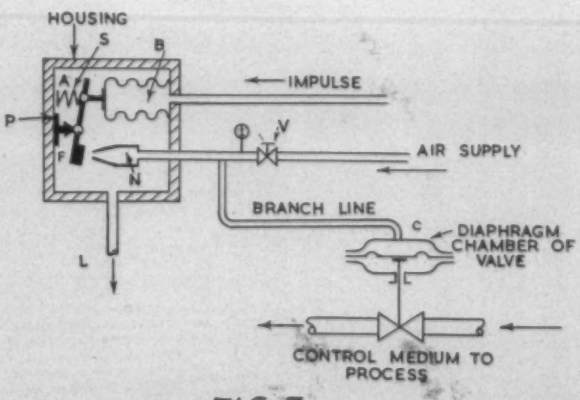


FIG. 7

form and draught-free distribution (Fig. 1). Various types of air conditioning units are now being manufactured but space does not allow to deal with their design in detail.

Fig. 2 illustrates the short air duct from a unit into a spinning room. Conditioning units are being made by various firms in several sizes, for example ranging from 2,000 to 8,000 cubic feet of air per minute, for heating duties from 50,000 to 175,000 B.T.U.s per hour for one row heating tubes, and for 115,000 to 407,000 B.T.U.s, respectively, for two row heating tubes. The cooling duties can range from 40,000 to 184,000 B.T.U.s per hour for cooling water temperatures from 65 to 90° F., but the types can be modified for duties in hot climates with regard to capacity of cooling load and humidification.

Fig. 1-A illustrates a simplified line drawing, showing typical units consisting of fresh air inlet air duct, re-circulation inlet, automatic damper control, air filters, capillary cells and air nozzles for humidification, whereby the capillary cells provide the required large surface for bringing the passing treated air into intimate contact with moisture. A row of scrubber plates then eliminates any surplus droplets from the passing air and motor driven fans of the twin-type deliver the conditioned air to the outlet. The water circulation pump is driven from the same electrometer as the twin fans, and glazed inspection doors allow observation of proper working at any time. Between the scrubber plates and the twin fans, a main heater is shown, but, of course, cooling coils will be used where necessary. The unit shown is practically self-contained, but the specification of installed plants vary considerably, from comparatively simple unit designs to fully automatically units, equipped with motorized modulating control valves after the heater, actuated by room thermostat and dew point thermostat at pre-heater (Fig. 3). The pump is usually not controlled since the efficiency of a capillary humidifier does not appreciably fall from its 97 per cent when the water pressure or spray water volume is reduced. Consequently this is allowed to run usually continuously, although sometimes a room humidistat can be red in series with the pump motor starter in order to shut off the humidity if moisture content of air in the shed rises when the pre-heater valve is shut.

It should be mentioned that the final balance of air movement can be provided for by fitting a number of wall or roof propeller extractor fans, having similar total capacity for air volume to each conditioning unit. One extractor fan, representing one air change, is usually allowed to run continuously while the balance are controlled through their motor starters by a multi-step thermostat. This temperature control switch stops or starts the fans in sequence, and follows very closely the setting of the air dampers, consequently providing reasonably well balanced air flow. Fig. 4 shows the layout of a zoned plant.

The air filters used are either viscous cleanable types or glass silk throwaway types to choice. The units can be supplied with direct expansion coolers and dehumidifiers suitable either for Freon or for Nethyl-chloride refrigerants. These can be fitted between the air filters and the humidifiers of the standard layout. These coolers for hot climate conditions are either supplied for connection to condensing units existing at the user's premises, or the condesing plant can be supplied with the air conditioning unit to be installed on the floor or on the roof in a reasonably adjacent position to the cooling elements within the conditioner.

Automatic Valve and Damper Control

Modern pneumatic temperature and humidity controllers for air conditioning are usually mounted on control panels,

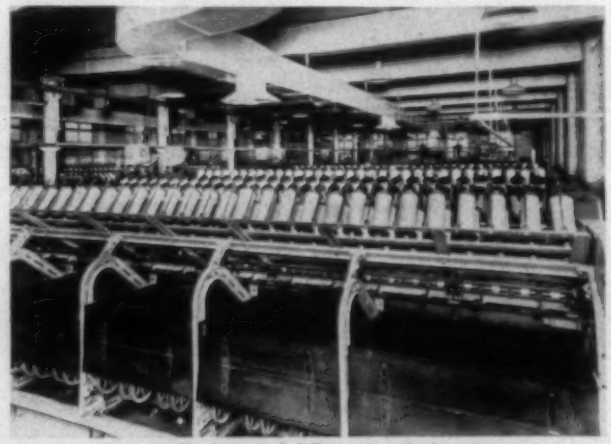


Fig. 2—Air ducts and diffusers in spinning room.

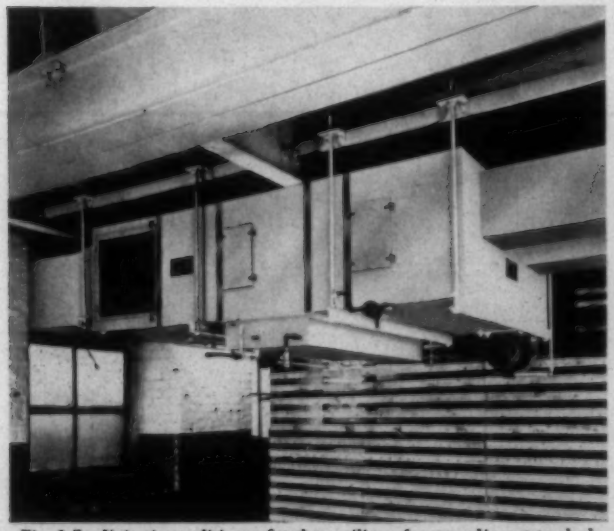


Fig. 1-Z—Unit air conditioner fitted to ceiling of room adjacent to shed.

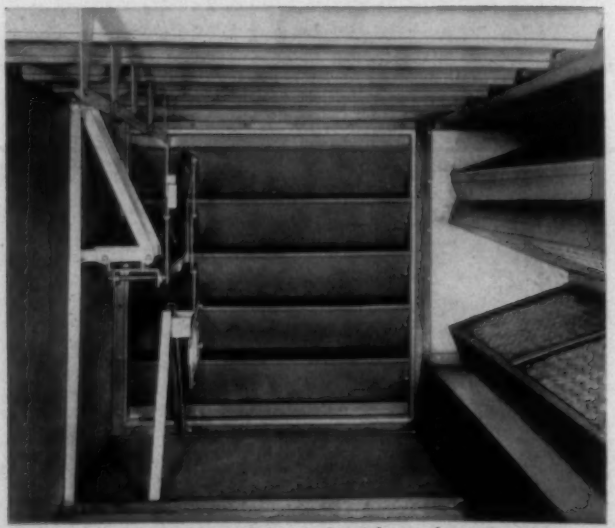


Fig. 3—Interior of unit conditioner. On *right* are shown the filter units with spun glass capillary cells. On *left* is the motorized air damper controller for actuating louvre dampers for humidity control.

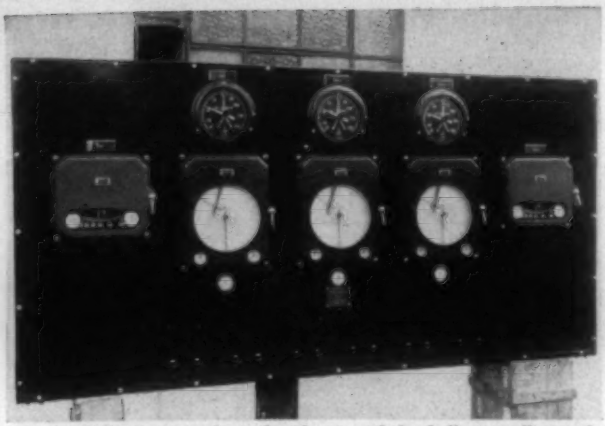


Fig. 5—Fullscope control panel with wet and dry bulb controllers and contact dial thermometers for air conditioning. *(Photo courtesy Taylor Instrument Cos., Rochester, N. Y.)*

similar as illustrated in Fig. 5, for "wet and dry bulb" controllers of the Fulscope type. On top of the circular chart recorder-controllers are fitted contact dial thermometers for on-off control and alarm purposes. On both sides are pneumatic indicator-controllers mounted. A pneumatic air damper motor for actuating linked air dampers according to a pneumatic humidistat is shown in Fig. 6. The upper illustration shows the linked return and fresh air inlet dampers operated from a diaphragm motor. The low illustration shows a sectional view through the latter. Air pressure comes from a pneumatic control mechanism, and is called the "output" pressure. Variation of output pressures operates a control valve, or an air damper, and is obtained for humidity control, as shown diagrammatically in Fig. 7. Assume that the controlled medium to process is spray water, if humidity in the room rises unduly, a pneumatic control impulse is produced by the humidistat in the shed. This air impulse actuates metallic seamless bellows "B" within the control mechanism. A spring "S" balances the bellows. A lever with flapper "F" is movable on a fulcrum "P" in such a way that increased air pressure in "B" moves flapper "F" towards the mouth of air nozzle "N" within the control housing. A constant pressure air supply comes via adjusting valve "V" into nozzle "N," and is either bled off through air leak "L," or if "F" moves closer to "N," back pressure builds up in the air branch line. Should flapper "F" close nozzle mouth of "N," full air supply pressure will build up in the air branch line, and the control valve will be closed. Conversely, if "F" is away from "N," air branch line pressure will be nil, and the control valve will be full open. Any throttled output air pressure in the air branchline will produce an intermediate position of the control valve or air damper.

Advantages of Unit Air Conditioners

It is claimed by the makers of packaged unit air conditioners that they have the following advantages over central conditioning plants.

(3) The humidification system is more elastic and follows quicker to automatic temperature and humidity control impulses from the plant.

(b) It is easier to maintain desired zones for various parts of the plant.

(c) Higher humidities are achievable by use of glass capillary cells.

(d) Should one unit fail, all others can take over. For central plants the whole humidification stops.

(e) Units take up less room and can usually be fitted anywhere.

(f) Large diameter ductwork is avoided.

It should, however, be realized that the first installation cost and also running cost may be higher for several packaged unit conditioners than for a central plant.

Engineered Electrical System Is Major Factor In Renovated Cone Plant At Pineville

WHILE a great deal was said in the November issue of TEXTILE BULLETIN concerning the Pineville, N. C., plant of Cone Mills Corp., of which Virgil R. Revels is superintendent and J. T. Lowry is master mechanic, a lot more may be said concerning the trend of closer relationship of construction, equipment arrangement and production in the textile industry, for which Dan McConnell, chief engineer of the company, has done a great deal of pioneering and development, and whose acute recognition of the industry's problems has been the means of making him one of the most resourceful developers of new ideas of practical value that have paid off in both saving labor and increasing production.

Card Rooms Becoming Modernized

Picture No. 1 shows a portion of the card room with individually driven cards, the same as all of the other cards at this mill, in which you immediately notice the absence of the usual card room scenery of belting and shafting. On the wall in the background you will see mounted the starting controllers for the motors on the individual drives, with the fusible safety switches being mounted above them, in a group arrangement of three controllers to each switch. Each card is controlled for starting and stopping by a "Start-Stop" push button station being mounted on it in an easily reached place, while the reversing control in the form of a drum switch is enclosed inside the starter housing, on the wall. This arrangement has more recently been worked out by mounting the controller on the cards, themselves, in connection with and just above the motor and drives, with the push-button "Start-Stop" station mounted in the front cover of the starter instead of a separate arrangement such as was originally the case, as mentioned above. The only overhead equipment is as you see, the vacuum stripping piping and an occasional

fan type unit heater, all of which in no way interfere with the arrangement of the fluorescent lighting fixtures, which eliminates a great many headaches in effective lighting layouts.

Spinning Rooms Facing Many Changes

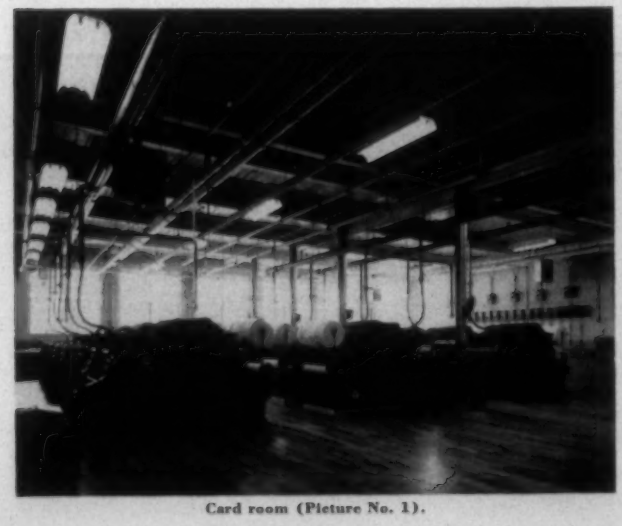
Picture No. 2 shows a spinner's alley view of the spinning room, where the traveling cleaning system shown is one of the most effective types of several which are on the market, and which calls for many considerations of the application of electrical wiring and circuit arrangement. These cleaners required a power supply of 220 volts, three-phase current, which was provided for by the installation of several banks of dry transformers, which stepped the voltage down from 550 volts to 220 volts, with each bank of transformers carrying a separate system of cleaners over a group of spinning frames. The lighting comes in for some consideration, being symmetrically laid out with the length of the fluorescent tubes parallel to the run of the yarn as it leaves the front rolls; the spacing is such as to produce approximately 27 foot-candles of light intensity, which is in keeping with the numbers of yarn in production, meeting the basic requirements of light to be adequate for the work to be done. You will note too that the ceiling is exceptionally clean and free from the usual burden of pipes, wires, etc.

Weave Room Features Labor-Saving Methods

You will see, by closely observing Picture No. 3, that the intensity of light is about double that of the other areas, with 2/40-watt, continuous rows of fixtures arranged with the length of the tubes parallel to the run of the yarn, which in this case is the warp, of course. You will also note the monorail mounted near the steel columns in the foreground as well as in the background. These are part of the traveling crane system for carrying the warp beams to the looms, on which an electric hoist does the lifting and the electric tractor does the pulling. The operator merely holds a push-button station and accomplishes the full operation from one point or, as he walks along. This crane system interlocks with a monorail system on back in the slasher room, and provides about the most

Spinning room (Picture No. 2).

Weave room (Picture No. 3).



Card room (Picture No. 1).

Inspection room (Picture No. 4).

complete coverage of both wiring and storage area that the writer has seen in any textile plant.

Inspection Equipment Especially Designed for Job

In Picture No. 4, you will note an example of the present-day trend toward specialized design of equipment for the purpose of accomplishing certain specific objectives, which in this case is the thorough inspection of the type of cloth woven at this plant. You can readily see that this is a rather individualistic sort of an inspection frame from several points of view, one of which is the fact that there is no reflected glare of light which would cause eye fatigue as well as reduce the acute seeing-ability necessary to detect defective spots, picks, slubs, etc., in order to keep from offending the *customer's* own inspection department, for these people fully realize that their *customer is the next inspector* after this cloth is shipped from the mill. Therefore, in an effort to eliminate this glare with the attendant eye fatigue, these inspection frames were designed for the cloth to be inspected by means of the light from beneath the frosted glass panels glowing through the cloth while it is passing along over the panel.

There are four 40-watt, 48-inch fluorescent tubes under the frosted plate glass panel on each frame, with the panel being approximately 48 inches square, which allows rapid inspection of the cloth with alert eyesight. The color of the lamps found best for this purpose should be about the same for both daylight and the new cool-white, with the possible exception being in favor of the cool-white on account of its higher output of light.

Overhead may be seen the 2/40-watt fluorescent fixtures alternately spaced on the fixture channel, about 48 inches apart, end to end. This arrangement is based upon the necessity of having a low level of light intensity in order to provide the greatest contrast at the inspection frames for maximum efficiency of the operator as she attends the cloth on its way across the lighted panel, which gives only the needed light along the alley for such clerical work as might be necessary at the desk stands shown.

The features which we have selected for discussion are only a few of many in effect at this modern and efficient plant, which, through the far-sighted consideration of Dan McConnell, chief engineer of Cone Mills Corp., represents a definite trend in the textile industry of the South that is soon due generally to take effect throughout the whole area.

System For Automatic Loom Lubrication

According to Ted V. Picraux, sales manager for the industrial division of Lincoln Engineering Co., St. Louis, Mo., a system for the automatic lubrication of looms has been developed and is now being tested on cotton looms. Mr. Picraux described the system at the plant maintenance show conducted in Philadelphia, Pa., this month.

The tests now being conducted on cotton looms are to ascertain whether the automatic system can withstand the high speeds and heavy vibration common to these machines, he indicated. The system has been operating in a laboratory for a year, he said. Meantime, automatic lubrication has been so developed that it is considered standard on twister frames, he said. The feasibility of the system had been questioned because it was not certain as to whether the lubrication could be applied to the traveler without soiling the yarn, it was said. However, the method is now in mills on Whitin and Saco-Lowell twisters, Mr. Picraux asserted.

The air appliance division of United States Hoffman Machinery Corp. has developed a vacuum cleaning system which is being used by Collins & Aikman Corp., Philadelphia, to clean looms, a Hoffman representative reported. Advantages of the method are said to be the production of cleaner fabric, reduction of fire hazard and less down-time for cleaning. The system is most practical in textile mills only when other machinery cleaning techniques have been abandoned and the vacuum cleaning system introduced, it was said. The new method requires the removal of all extraneous matter from the machinery before cleaning begins, it was explained.

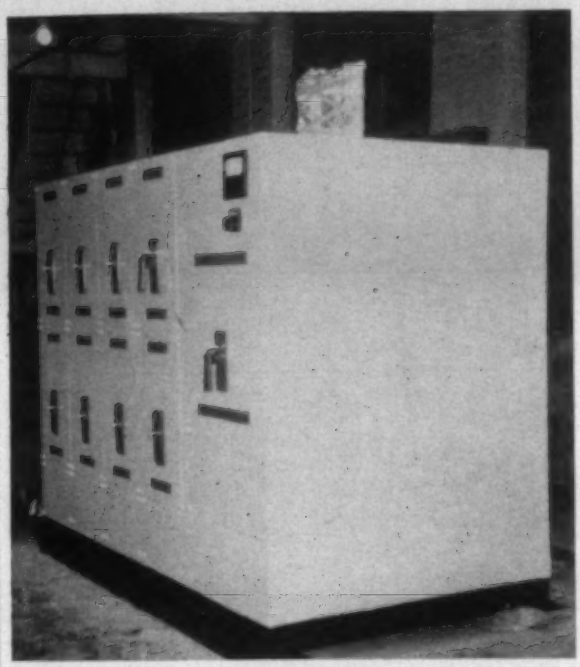
The textile industry is using a lot of industrial trucks but not so many as it will utilize some day, an official of the industrial truck division, Clark Equipment Co., said. Much ground has yet to be gained in the introduction of this equipment to the mills, it was said.

Industrial Truck Drivers Given Pointers

The cost of *not* training industrial truck drivers is many times the price of a proper program of instruction. According to J. L. Van Cara, driver-training expert of the Automatic Transportation Co., Chicago, current training of industrial truck drivers, except in the largest firms, is poor.

He acknowledged that licensing drivers is a too-ambitious project, and said that he'd compromise for sound training programs, based on proven procedures that apply equally well to teaching individual drivers or whole classes. The first step, Mr. Van Cara said, is to insist that the manufacturer's representative be around to explain and demonstrate its characteristics when the truck is installed. Before he ever gets onto the truck, the fledgling operator should understand its functions, abilities, limitations and capacity. He should know where the controls are and how they work. Only then should he get on the vehicle.

Mr. Van Cara listed 17 points which he feels make an excellent basic code for any company's industrial truck operators: (1) Keep the body inside running line of the truck. (2) No passengers should be permitted to ride on the trucks (a rule of great importance). (3) Keep to right of aisles whenever possible. (4) Slow down when vision is obstructed. (5) Stop at doors, corners, exits, etc., and sound horn. (6) Use horn when approaching pedestrians. (7) Start, stop, or turn gently, not suddenly. (8) Face in the direction of travel always. Before backing up, look in the direction you will go. (9) Carry only loads for which the truck is meant. (10) Keep loads below eye level, carrying them just clear of the floor. If the load blocks vision, it should be trailed except on sit-down model trucks (a problem which can be avoided by selection of the correct truck for the load). (11) Never drive high lift trucks with platform or forks elevated. (12) Bent or damaged loading plates should not be used. (13) Reverse controls are not a substitute for brakes. (14) Driving with wet or greasy hands is dangerous, because it can cause the operator to lose control of the wheel. (15) Slow down for wet or slippery floors. (16) Stunt driving and horseplay should be eliminated. (17) Trucks should be returned to the charging station or parking area at the end of the shift.



New switchboard built by Southern Electric Service Co. for installation at Bladenboro (N. C.) Cotton Mills.

Southern Electric Service Co.

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VULCANIZED FIBRE TEXTILE TRUCKS

ARE TOUGHER, EASIER TO HANDLE

Made of finest vulcanized fibre available—3/32″ or 1/8″ thickness. Sturdy, all-steel welded frame. Available in three styles.

J. C. Paddock Company has *specialized* in the manufacture of *textile* trucks for 12 years and *knows* the industry's requirements.

In addition to our Vulcanized Fibre Trucks, we also manufacture Aluminum, Stainless Steel, and Galvanized Metal Trucks, Quill Cans, Filling Boxes and other materials handling equipment.

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J. C. PADDOCK COMPANY

SPARTANBURG SOUTH CAROLINA

Promotions, Resignations, Honors, Transfers, Appointments, Elections, Civic and Associational Activities

PERSONAL NEWS

E. W. Ercklentz *(left)* has been appointed vice-president in charge of sales for Kearny Mfg. Co., Inc., Kearny, N. J. . . . Recent additions to the Kearny staff include O. H. Winterer, in the machinery division; Henry J. Smith, engineer in charge of electronic and electromechanical research; Howard S. Gerry, in the sales force of the chemical division; and William R. Fox as sales representative in the six New England states.

Brown Mahon, James A. Lybrand, Jr., Harold R. Turner and Jesse A. White were appointed vice-presidents of J. P. Stevens & Co., Inc., at a meeting of the board of directors Jan. 8 in Greenville, S. C. At the meeting Alester G. Furman, Sr., announced his resignation from the board of directors and his son, Alester G. Furman, Jr., of the Greenville investment firm of Alester G. Furman Co., was made a director of the firm to succeed him. . . . Mr. Mahon, a resident of Greenville, has been associated in an administrative capacity with the company and mills of the Dunean Group since 1933. He served as assistant manager of Dunean Mills, Watts Mills, Aragon Baldwin Mills and Victor Monaghan Co. prior to 1946, and as assistant to the executive officer of the Dunean Group since the merger of these mills with J. P. Stevens & Co., Inc. . . . Mr. Turner, who also lives in Greenville, has been with the company since 1922. He became overseer of weaving at Dunean Mills in 1927, and rose from the position of plant superintendent to general manager of manufacturing operations at Dunean and Watts Mills. He is currently assistant executive officer of Dunean Mills, Watts Mills and Victor Monaghan Co. divisions. . . . Mr. Lybrand directs company synthetic yarn purchases from Greensboro, N. C. He was formerly treasurer of Carter Fabrics Corp. and served in an administrative capacity for other mills of the company. . . . Mr. White is assistant general manager of the company's Carter Group of mills. He has been with the company since 1929 and was promoted from general manager of Republic Cotton Mills, Great Falls, S. C., to his present position last September.

J. M. Johns, general manager of industrial sales for the Libbey-Owens-Ford Glass Co., has been appointed general manager of the new L.O.F. fiber-glass division. Mr. Johns succeeds Robert E. Worden, Philadelphia, Pa., consulting engineer, who served as general manager of the division in its development stage.

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George B. Cramer has returned to his home in Charlotte, N. C., after serving three years as head of the textile section of the industry division of the Economic Co-operation Administration in Europe. Mr. Cramer originally accepted the appointment for one year, but remained two additional years at the request of the State Department. He was for many years treasurer of Cramerton (N. C.) Mills and is recognized as an authority on technical textile plant management. Cramerton Mills was sold to Burlington Mills Corp. several years ago and is now a division of that firm.

Harry King has been named sales representative in South Carolina for Marquette Metal Products Co., Cleveland, Ohio, manufacturer of the Marquette roller bearing spindle with full-floating footstep bearing. Mr. King is a graduate of Clemson College and has been identified with the textile industry in the Southern states for several years. He is located in Greenville, S. C.

Troy B. Stone, personnel director of Fulton Bag & Cotton Mills, Atlanta, Ga., has been named to serve also as head of the company's public relations division. He has been associated with the company for the past 32 years. Mr. Stone is a past director of the Atlanta Personnel Club, past director of the personnel manager's division of the Cotton Manufacturers Association of Georgia, and is a member of the National Association of Personnel Directors.

James A. Chapman, president and treasurer of Inman (S. C.) Mills and Riverdale Mills, Enoree, S. C., recently was named to the board of directors of the South Carolina Chamber of Commerce. . . . Thomas D. Russell, president of Russell Mfg. Co., Alexander City, Ala., has been elected a vice-president of the Alabama State Chamber of Commerce. Mr. Russell also was re-elected to the board of directors as were Frederick Moore, secretary-treasurer of Florence (Ala.) Cotton Mills, and J. Craig Smith, president and treasurer of Avondale Mills, Sylacauga, Ala. . . . F. E. Grier, president and treasurer of Abney Mills, Greenwood, S. C., J. C. Self, Jr., treasurer of Greenwood Mills and J. B. Harris, vice-president of Greenwood Mills, recently were elected to the board of directors of the Greenwood Chamber of Commerce for two-year terms. . . . W. H. Morrow, an official of Efird Mfg. Co., Albemarle, N. C., recently was elected president of the Albemarle Chamber of Commerce. . . . Walter M. Williams, executive vice-president and manager of Virginia Mills, Inc., Swepsonville, N. C., has been re-elected first vice-president of the Burlington (N. C.) Chamber of Commerce.

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PERSONAL NEWS

home in Brookhaven, Ga., and will work with Aichel Steel & Equipment Co., Freeman & Sons., Inc., Wrenn Bros., and Brungart-Jennings, Inc., Hyster dealers in his area.

M. O. Alexander, who retired as general superintendent of Woodside Mills, Greenville, S. C., in 1946, was honored recently when the mill's new gymnasium was opened and dedicated to him. W. H. Beattie, president of Woodside Mills, made the dedicatory speech. Mr. Alexander became superintendent at Woodside in 1903 and in 43 years saw the plant expand from 300 looms and 13,000 spindles to 2,300 looms and 112,000 spindles.

The following promotions in management and supervisory personnel at the Gainesville, Ga., plant of Chicopee Mfg. Corp. were made known recently: Robert W. Lawson has been promoted from the position of mill superintendent to the position of plant manager. Mr. Lawson is a native of Gainesville and has been associated with the Chicopee plant since his graduation from Georgia Tech in 1933. At one time he was in charge of the standards department and later became mill superintendent. . . . L. Denton Hardway has been named mill superintendent. He is also a native of Gainesville, attended Georgia Tech, and has been with Chicopee for a number of years. . . . Wilbur Otey succeeds Mr. Hardway as head of the standards department. He has been with Chicopee since his graduation from Georgia Tech in 1939.

Col. H. R. McKenzie, formerly chief of the Quartermaster Purchasing Division, New York Quartermaster Procurement Agency, has been reassigned as Chief Quartermaster, U. S. Forces in Austria, with headquarters in Salzburg, Austria. The new chief of the N.Y.Q.M.P.A. purchasing division had not been named early this month.

Jarvis Cromwell has been elected chairman of William Iselin & Co., Inc., and Morton Goodspeed has been elected president. Mr. Cromwell, a partner in the company since 1925 and president since the corporation was formed in 1931, assumed his new office Jan. 1, 1952, following the resignation of Lincoln Cromwell, who has served as chairman 20 years and has been a partner since 1898. The latter will continue as a director and advisor to the company. Mr. Goodspeed has been executive vice-president since 1949. He has been with the company since 1936. Edward A. Mayer and John F. Sterling have been elected vice-presidents; John O'D. Feeks, assistant vice-president, and George F. Kegelmeyer, assistant treasurer. These four men are connected with the Grand Rapids, Mich., branch of the company. Mr. Mayer joined the company in August, 1932, and was transferred from the main office in New York to Grand Rapids in 1937. He served as credit manager of the Grand Rapids operation and was elected as assistant vice-president in December, 1946. Mr. Sterling joined the firm in April, 1939, in Grand Rapids and was named assistant vice-president in December, 1947. Mr. Feeks has been a senior supervisor since joining the Grand Rapids staff in May, 1941. He was formerly a member of the credit department in the New York office. Mr. Kegelmeyer has been associated with the company since 1939. He was credit manager of the company's branch office in Columbus until consolidation of the office with the Grand Rapids branch in 1949.

Thomas W. Kitchen has been named Southern representative for Cook-P & N Machine Co. and will make his headquarters at 1201 South Carolina National Bank Building, Greenville, S. C. Mr. Kitchen is a graduate of Clemson College and is well known in the trade, being formerly superintendent of North Carolina Finishing Co., Salisbury, N. C., and manager of the finishing department, Dan River Mills, Danville, Va.

William G. Perry recently retired from partnership in the J. E. Sirrine Co., Greenville, S. C., because of ill health.

George J. Muller, formerly executive vice-president, has been elected president of Morningstar, Nicol, Inc., manufacturer of starches, dextrines and adhesives. Mr. Muller succeeds Joseph Morningstar who becomes chairman of the board of directors. . . . Murray Stemple of Chicago, a member of the board of directors, has been elected executive vice-president succeeding Mr. Muller and R. Mayson Foster of New York has been named treasurer and a member of the board.

Christine Brooks Carter, daughter of W. J. (Nick) Carter of J. P. Stevens & Co., Inc., Greensboro, N. C., is to be married March 1 to Francis Edward Price of Greensboro.

John E. Scott has joined Terrell Machine Co., Charlotte, N. C., as sales representative in Georgia, Alabama, Mississippi and Louisiana. For the past several years Mr. Scott has been associated with the Draper Corp. In his new position he succeeds Hugh K. Smith who recently joined Watson & Desmond, Charlotte firm representing textile supplies manufacturers. Mr. Smith, a native of Langdale, Ala., will represent Watson & Desmond in Georgia, Alabama, Mississippi and Louisiana.

David R. Johnston of Charlotte, N. C., president of Johnston Mfg. Co., Highland Park Mfg. Co. and other affiliated textile mills, has been elected to the board of directors of American Trust Co. at Charlotte; re-elected to the board were Martin L. Cannon of Charlotte, J. Harold Lineberger of Belmont, N. C., and James L. Coker of Hartsville, S. C., well-known in textile circles. Two other Charlotte textile industry executives have been re-elected to bank boards—E. A. Terrell by the Charlotte branch of Wachovia Bank & Trust Co., and R. I. Dalton, Sr., by the Commercial National Bank.

Fred Nidiffer has been promoted from assistant superintendent to superintendent of

the finishing plant of American Thread Co. at Bristol, Tenn. Mr. Nidiffer has been associated with the Bristol plant of American Thread continuously since June 1, 1941, with the exception of three years with the Air Transport Command during the war.

J. Albert Woods, president of Commercial Solvents Corp., recently was elected as a director of Corn Products Refining Co., New York.

Gary Bodie has resigned from his post as labor relations director at Woodside Mills, Greenville, S. C., to become associated with Smith & Fox, realtors of Greenville.

R. E. Waldo, affiliated with General Motors Corp. for the past 25 years, has been named general manager of the corporation's New Departure Division. He succeeds Milton L. Gearing who severed connections with the division to engage in business for himself.

Dr. Frederic Bonnet, pioneer in the development and utilization of rayon, is to receive the Harold De Witt Smith Memorial Medal at the March meeting of Committee D-13 on textile materials of the American Society for Testing Materials. The medal is awarded for outstanding accomplishment in the field of textile fiber science and utilization, which includes the development and promotion of knowledge of textile fibers and structures and methods for the evaluation of their properties. Dr. Bonnet was for many years director of the standards department of American Viscose Corp.

Joseph H. Bennis *(left)*, president of New York & New Jersey Lubricant Co., accompanied by Herbert Bonem, manager of the firm's export department, returned to the U. S. Dec. 2 from an European trip of several weeks during which they visited many of the largest textile mills in Norway, Sweden, Finland, Denmark, Holland and England.

Luther H. Hodges, former official of Fieldcrest Mills, Spray, S. C., and now an active director of American Thread Co., recently was appointed state chairman of the 1952 Easter Seal Campaign sponsored by the North Carolina League for Crippled Children.

Robert M. Cushman has been appointed vice-president in charge of manufacturing operations for Textron Mississippi, Inc. Mr. Cushman will continue as vice-president in charge of operations of the parent company, Textron, Inc.

Jonathan Rhyne has been named to succeed J. Mack Stowe, retired, as superintendent of National Yarn Mills, Inc., Belmont, N. C. A graduate of North Carolina State College with a degree in textile engineering, Mr. Rhyne was manager of the plant's central laboratory prior to his recent promotion.

Transfer of two district salesmen, Charles H. Scott, III, of Philadelphia, Pa., and John C. Folsom of Providence, R. I., to the

PERSONAL NEWS

New York sales offices of American Viscose Corp. was announced Jan. 3. Both men are joining the viscose filament yarn sales division, and will devote their time to textile yarn sales. Mr. Scott joined American Viscose in 1946 after three years' service with the U. S. Army in Italy. Mr. Folsom joined American Viscose in 1940 after graduating from Harvard University. Following three years of service with the U. S. Army Air Force in England, he rejoined the corporation as a salesman in the Providence district office.

Joseph P. Cuff has resigned as director of sales and merchandising and head of the New York office of the Cranston (Pa.) Print Works Co., printers and finishers of cotton fabrics. With Cranston for the past 28 years, Mr. Cuff joined the company at the age of 19 as secretary to Fred J. Bigbee, who then headed the New York office. When Mr. Bigbee died in 1928, Mr. Cuff, at 23, was promoted to the position. During the period of Mr. Cuff's connection with Cranston, the company expanded greatly in size. In addition to the original plant in Rhode Island, the firm acquired the Slater Co. in Webster, Mass., now the Webster Division, in 1936. In 1949, the new Cranston Plant at Fletcher, N. C., was completed. Mr. Cuff was in charge of sales and merchandising for all three plants. Mr. Cuff plans an extended vacation. He has not announced his future plans.

Dr. Daniel Frishman has returned to the Harris Research Laboratories, Washington, D. C., after having served for two years as director of research at Hollander & Sons. Dr. Frishman is engaged in developing and applying methods for improvements in the quality and processing of wool. . . . Other additions to the staff include Tyrone Z. Denessy, who recently arrived in this country from Germany where he was employed at the Research Institute for Textile Chemistry at Badenweiler; Marily Ellison, formerly of Gillette Laboratories in Boston; Shirley P. McGinn, Nancy G. Lipps, Genevieve A. Poore and Anne M. Vann.

Edwin R. Jerome has been elected president and general manager of Victor Ring Traveler Co., Providence, R. I.

James H. Martin, assistant general manager in charge of quality, has been promoted to general superintendent of the mercerizing group of plants of American Yarn & Processing Co., Mount Holly, N. C. Prior to joining A.Y.P. several months ago, Mr. Martin was plant manager of the Mebane Division of Dixie Mercerizing & Spinning Co., Chattanooga, Tenn.

John Brasch, superintendent of the Burlington Mills Corp. cotton spinning plant at Smithfield, N. C., took office Jan. 1 as president of the Smithfield Kiwanis Club.

J. W. Hubbard, C. P. Clanton, and H. J. Jones have been placed in charge of the Charlotte, N. C., Greenville, S. C., and Atlanta, Ga., offices, respectively, of Saco-Lowell Shops. In the past the Greenville and Atlanta sales offices have been reporting to the Charlotte office. This has been discontinued in a move to facilitate communications and now all three Southern offices report directly to the general sales office in Boston, Mass.

J. T. Braswell, Jr., formerly purchasing agent for the USEO Division of Callaway Mills Co., LaGrange, Ga., is now assistant sales manager for the division. . . . Other personnel changes in the USEO Division include: J. Morgan Jackson, formerly superintendent of the Unity Plant, named purchasing agent and manager of the USEO personnel department; J. Philip Cleaveland, superintendent of Oakleaf Plant, transferred to Unity Plant as superintendent; Jesse G. Maddox, superintendent of Unity Spinning Plant, will have supervision of equipment and personnel moved from Unity Plant into the Oakleaf Plant building and the name of the Oakleaf Plant will not be continued as the building and equipment becomes a part of the Unity Spinning Plant. . . . James Teaver, technical engineer in the company's HVD Division, recently was installed as president of the LaGrange Kiwanis Club for 1952.

Westvaco Chemical Division, Food Machinery & Chemical Corp., New York, announces a series of advancements within the sales division: Arthur F. Smith, previously divisional sales manager for solvents, barium chemicals and magnesol becomes divisional sales manager alkalis, succeeding W. N. Wyatt, who has been appointed district sales manager at Chicago. . . . W. L. Sager, previously assistant district sales manager for the New York area becomes divisional sales manager, solvents and magnesol. He is succeeded by William Holleman who has been New England sales representative for Westvaco. . . . J. G. Bronson who has been assistant divisional manager, magnesium chemicals, becomes divisional sales manager, barium and miscellaneous chemicals. Mr. Bronson is succeeded by J. Petersen, until until recently at Westvaco's Pocatello elemental phosphorus plant.

Harry C. Carter, a vice-president and director of J. P. Stevens & Co., Inc., is serving as Greensboro, N. C., chairman of the 1952 March of Dimes.

John Hutton, vice-president and director of Sayles Finishing Plants, Inc., retired Dec. 31 as manager of the firm's Glenlyon Print Works Division, Providence, R. I., and has been succeeded as general manager there by Elliot Broadbent. Mr. Broadbent has been with Sayles since 1917 in various technical and managerial positions. Mr. Hutton will continue as vice-president and director of the company and its subsidiary, Sayles Biltmore Bleachery, Inc., Biltmore, N. C. . . . Arthur F. McLean, with the company since 1949, has been named superintendent of the Glenlyon facility.

J. Curtis Jordan, Jr., president of Jordan Mills, Inc., Columbus, Ga., recently was elected chairman of the dyed yarn division of the Carded Yarn Association succeeding G. P. Barnwell of Bibb Mfg. Co., Macon, Ga., who served in that capacity in past years. . . . A. J. M. Wannamaker of Orange Cotton Mills, Orangeburg, S. C., has been elected to the association board replacing

J. A. Farmer, who retired from Textron Southern, Inc., Anderson, S. C.

R. Hobart Souther of Cone Mills Corp., Greensboro, N. C., chairman of the Piedmont Section of the American Association of Textile Chemists & Colorists, will organize a stream sanitation committee within the unit to study textile waste and how textile processing can be improved so less industrial waste will be dumped into streams. . . . Neal Truslow of U. S. Rubber Co., Winnsboro, S. C., has been named to head a Piedmont A.A.T.C.C. committee to conduct research on textile tear testing.

James T. Wardlaw retired recently as treasurer of Drayton Mills, Spartanburg, S. C. Mr. Wardlaw had been associated with Drayton for 20 years, the past 18 as treasurer. He will continue as a Drayton director. . . . Alan B. Sibley of Greenville, S. C., succeeds Mr. Wardlaw as treasurer at Drayton. Mr. Sibley is vice-president and general manager of Judson Mills at Greenville, Gerrish Milliken Mill at Pendleton, S. C., Kingsley Mill at Thomson, Ga., and Gayley Mill at Marietta, S. C., all filament rayon mills of the Deering, Milliken & Co. group.

Edwin F. Vandervoort has been elected assistant treasurer of the Association of Cotton Textile Merchants of New York. Mr. Vandervoort joined the staff of the association in 1927 and has been with the organization continuously except for a period of service with the Air Corps during World War II.

Recent personnel appointments at Lanett (Ala.) Bleachery & Dye Works, a unit of West Point (Ga.) Mfg. Co. includes: A. D. Turner, superintendent of all dye works; Wyatt Kitchens, assistant to Mr. Turner; J. C. Papini, superintendent of printing; Lester Carruthers, assistant to Mr. Papini; Claude Milford, night superintendent; and Roy Dewberry, overseer of finishing.

C. A. Paget, who has been in charge of rayon dyeing at Dan River Mills, Danville, Va., has resigned that position to join J. P. Stevens & Co., in New York City.

OBITUARIES

Chester S. Allen, 70, of New York City, who prior to his retirement in 1950 was president of Lockwood Greene Engineers, Inc., architects-engineers of Boston, New York, Spartanburg, S. C., and Montreal, Canada, died Jan. 6 at Auburndale, Mass. His firm is widely known in the textile and general industrial field. Surviving are his wife and a son.

Theodore W. Boyce, 52, since 1943 administrative assistant to the vice-president in charge of the Grey Mills of Springs Cotton Mills at Lancaster, S. C., died Jan. 10 after a short illness. Before joining Springs, Mr. Boyce was for 22 years secretary and treasurer of Mansfield-Jennings Mills in Lumberton, N. C. Mr. Boyce is survived

by his wife, two daughters, three brothers and two sisters.

Robert Maurice Cole, 35, assistant traffic manager at West Point (G.) Mfg. Co., died Jan. 2.

J. Roy Fant, 66, of Lockhart, S. C., for 37 years assistant treasurer and secretary of Monarch Mills, Union, S. C., died Dec. 24 at a hospital in Union. Mr. Fant also was a director of Monarch and was vice-president of the Lockhart Power Co. Survivors include his wife, six sons, one daughter and two sisters.

Joseph E. Gant, 71, textile executive of Burlington, N. C., died Jan. 4. A graduate of Lowell (Mass.) Textile Institute, Mr. Gant entered the textile business in association with his father at the former Altamahaw Cotton Mills, Burlington, and Glen Raven Mills, where he was manager. He later moved to Jewell, Ga., where for seven years he was part owner and manager of Jewell Cotton Mills. He is survived by his wife, a son and a daughter, five brothers and two sisters.

Raymond C. Gaugler, 59, president of American Cyanamid Co., died Jan. 11 after suffering a cerebral hemorrhage. He made his home in Larchmont, N. Y. Mr. Gaugler, who had been with Cyanamid since 1917, served as assistant treasurer and comptroller, and was named treasurer in 1929. In 1939 he became vice-president in charge of finance; in 1947, executive vice-president. He was elected president Jan. 5, 1951, succeeding the late W. B. Bell. Surviving are his wife, four daughters and 13 grandchildren.

August N. James, 76, proprietor of Kindley Cotton Mills at Mt. Pleasant, N. C., and James Knitting Mills, Inc., Hickory, N. C., died Dec. 19. Mr. James is survived by six daughters, a son and a brother.

W. H. Mills, 71, retired textile machinery representative and salesman of Forest City, N. C., died recently of a heart attack. Surviving are his wife, one son, two daughters, two sisters and a half-brother.

John L. Muller, partner in the cotton yarn firm of L. P. Muller & Co., Philadelphia, Pa., founded by his father, died Jan. 5 in University Hospital. He had been ill three months. He was 54 and was general partner since 1929.

Edward G. Padgett, 50, of Charlotte, N. C., safety engineer with Employers Mutual Insurance Co. of Wausau, Wis., and well known in the textile industry, died Dec. 20 at his home in Charlotte. He formerly was director of safety for the North Carolina Industrial Commission. Surviving are his wife, three sons, a step-daughter and two step-sons, and a brother.

James A. Rafferty, 65, vice-president and director of Union Carbide & Carbon Corp., died Dec. 19 in Fort Lauderdale, Fla. Interment was made in Hawthorne, N. Y. Mr. Rafferty was a pioneer in the development of the synthetic organic chemical industry in the United States, which was built up largely under his direction since its beginning in 1920. He joined Union Carbide in 1920 as general manager of the firm's newly-formed Carbide & Carbon Chemicals Corp.; and in 1929 was named president of Carbide & Carbon Chemicals Corp. and chairman of the board in 1944. He was named vice-president of Union Carbide in 1938, a director in 1941, and in 1944 became a member of the firm's executive committee. Surviving are his wife, six children, four brothers and two sisters.

Dr. Arthur B. Ray, 62, sales manager of the special products division of Carbide & Carbon Chemicals Co., died suddenly Dec. 24. Dr. Ray was considered by many as the country's foremost authority on activated carbon, the essential ingredient in gas masks and industrial solvent recovery systems. A native of Leaksville, N. C., Dr. Ray first joined Union Carbide & Carbon Corp. in 1919 as a research chemist with the National Carbon Co. He subsequently became associated with Carbide & Carbon, which like National Carbon, is a division of Union Carbide. His wife and two daughters survive.

Esco L. Reese, for many years operator of the Farmers Woolen Mills, Jamestown, Ky., died Jan. 4 at his home in Jamestown. The plant ceased to operate about two years ago. Surviving Mr. Reese are two sons, four daughters and a sister.

Henry J. Rolston, 64, of Boonton, N. J., controller of Pepperell Mfg. Co., died Dec. 27. Mr. Rolston was for a number of years a stock broker in New York City before joining Pepperell in 1945.

Jefferson Davis Talbert, 56, assistant treasurer of the USEO Division of Callaway Mills Co., LaGrange, Ga., died Jan. 2 of a heart attack. He had been associated with Callaway Mills Co. for almost 30 years in various positions. He is survived by his wife, one daughter, three sisters and two brothers.

Falls L. Thomason, 55, Southern manager for New York & New Jersey Lubricant Co., died suddenly Dec. 21 of a heart attack at his home in Charlotte, N. C. During World War I Mr. Thomason was on overseas duty 19 months and joined New York & New Jersey Lubricant Co. upon his discharge from service. He succeeded his late father, L. A. Thomason, as Southern manager for the firm. Mr. Thomason was recognized as probably the South's foremost authority on textile machine lubrication. Surviving are his wife, two daughters, a granddaughter, his step-mother, a half-sister and two half-brothers.

MILL NEWS

CONSTRUCTION, NEW EQUIPMENT, FINANCIAL REPORTS, CHARTERS, AWARDS, VILLAGE ACTIVITY, SALES AND PURCHASES

ANDERSON, S. C. — Construction was started recently on a $2,500,000 plant here for M. Lowenstein & Sons, Inc., New York. The plant, scheduled to be in operation by mid-Summer, will be Lowenstein's first to manufacture synthetic gray goods. The new facility will be known as the John A. Lyons Division of Orr Mills; Orr Mills is a Lowenstein subsidiary.

GLASGOW, VA.—James Lees & Sons recently announced plans for construction of a $1,050,000 addition to its plant here. Part of the new facility will be used for the defense program while additional manufacturing space, office quarters and new provisions for the company's retail carpet clinic will be part of the addition.

RALEIGH, N. C.—The first Southern plant of American Woolen Co. is expected to be in operation here by March. The former Premier Worsted Mill, purchased last year by American Woolen Co., has been extensively remodeled and installation of new machinery is now almost completed. Upwards of 100 modern looms have been installed, it is reported. The new facility will be utilized by American Woolen Co. for the production of worsted cloth. Twenty-five acres of land around the plant have been acquired and it is considered likely that a sizeable expansion will be undertaken in the future.

SPINDALE, N. C.—A new department for the production of spun yarns has been completed at Stonecutter Mills Corp. and is scheduled to begin operations soon. The new department is a small pilot unit consisting of carding and spinning and other complementary equipment. The new unit is expected to produce from 20,000 to 25,000 pounds of spun yarns per week.

ROCK HILL, S. C.—The main mill building of Gold-Tex Fabrics Corp. is being remodeled at a cost of about $41,000. The work includes closing in windows, addition of toilet facilities, and construction of a platform for an evaporative cooling system soon to be installed.

LAURENS, S. C.—A fire last month at Palmetto Worsted Mill here caused considerable damage. Hyman Lurey, owner of the building, stated that he planned to rebuild immediately. The building and equipment was insured.

SPRAY, N. C. — It is considered likely that Union Carbide & Carbon Co. will have to wait several months before getting a government decision on whether or not it may construct a $33,000,000 synthetic fiber plant in the Leaksville-Spray area. The National Production Authority indicated recently that the certificate of necessity on the plant, needed before vital materials can

MILL NEWS

be obtained for construction, has no urgent classification.

CLEMSON, S. C.—Limited operation was started last month at the nearly-completed 14-acre cotton mill and finishing plant of Utica & Mohawk Cotton Mills Co., Inc., near Clemson. Known as the Utica & Mohawk Division, the new facility will employ 1,200 people utilizing 45,000 spindles and 900 wide sheeting looms. The finishing plant will handle goods from this mill and from the Seneca (S. C.) Division.

PARKERSBURG, W. VA.—First shipment of textile fiber glass was dispatched recently from the new fiber glass division plant of Libbey-Owens-Ford Glass Co., it is announced by Donald L. McClure, plant manager. The textile glass is destined for delivery to a New England paper converter to be used in the reinforcement of asphalt laminated craft paper for the Armed Forces. "Within the last few days we have put 25 per cent of our capacity for making glass yarns into operation and will continue to set up the additional machines and train necessary personnel to man them," said Mr. McClure. There are now more than 210 employees on the payrolls and more in training.

CHARLOTTE, N. C. — The Kendall Co. recently announced adoption of a wage earners' pension plan which will be financed completely by the company. The plan has been submitted to the Wage Stabilization Board for approval and will be put into operation soon. The Kendall Co. operates plants in the Carolinas at Charlotte, and at Pelzer, Newberry, Edgefield and Camden, S. C.

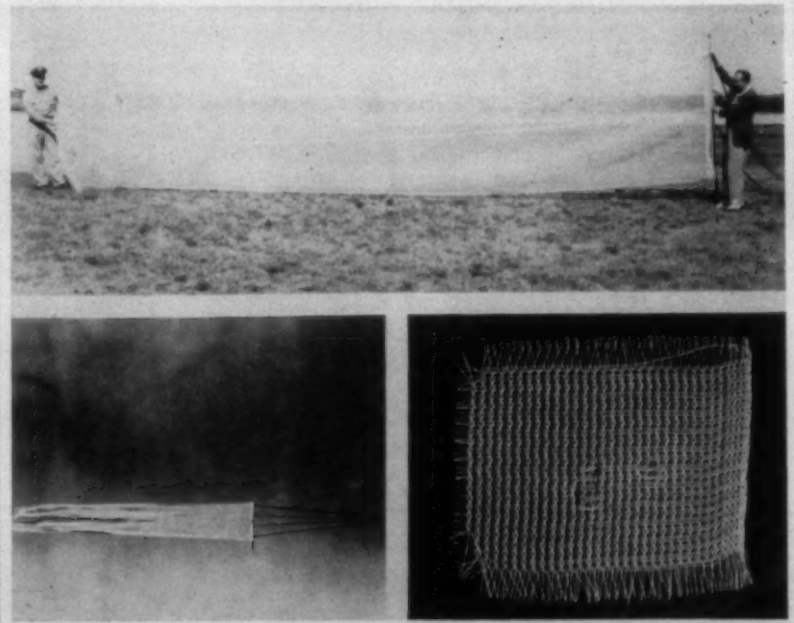
SPINDALE, N. C.—A new thread processing firm, the Henry F. Thomas Co., Inc., began operations here recently. Initially, the plant is employing 30 persons but ultimate plans are to expand the plant to many times that size.

TOCCOA, GA.—North Georgia Processing Co., a Delaware corporation, has been merged with J. & P. Coats (R. I.) of Pawtucket, R. I., and the new name of the two firms will be J. & P. Coats, Inc. Both are subsidiaries of I. P. Clarke Co., Ltd., a British firm.

GREER, S. C.—The handsome new $135,000 gymnasium built for employees of the Greer Plant of Victor-Monaghan Co. was dedicated and put into use Jan. 14. The gymnasium will seat 1,600 spectators for basketball games and other events. Victor-Monaghan is a division of J. P. Stevens & Co., Inc.

CHARLESTON, S. C. — The Charleston Plant of United Piece Dye Works began making test runs recently. At first the plant will dye and finish only; printing may be done later.

FORSYTH, GA. — Georgia Twine & Cordage Co. and other Forsyth properties



A NEW TYPE OF AERIAL TOW-TARGET RECENTLY ADOPTED BY THE NAVY AND AIR FORCE is made of fabrics woven by Reeves Bros., Inc., from Bakelight polyethylene monofilament yarns. Flown at 20 to 30 thousand-foot levels where temperatures are very low, these flat, banner-type targets also undergo abnormal stress from the flutter produced by speeds of over 300 miles per hour. While most materials become brittle and break at low temperatures, Bakelite polyethylene remains flexible at 60 below zero and the minor degree of stiffening at extremely low temperatures tends to give it greater tensile strength under stress. A banner-type tow-target *(top photo)* is now being made of two 36-inch widths of loosely woven Bakelite polyethylene monofilaments seamed together to form a banner about 30 feet long and six feet high. A special stabilizing weight keeps this banner upright in the air as a target for air gunners *(bottom left photo)* making practice gunnery runs. Bakelite polyethylene extruded in monofilaments .019 to .023 of an inch in diameter, is made into a fabric with a locked leno weave and 12 by 11 threads per inch *(bottom right photo)*. This locked weave holds bullet shattered threads in place and prevents them from unraveling to the end of the target to destroy evidence of successful hits. A large percentage of failures in other tow-targets develops after 20 minutes of flight stress, but the same type of target made from Bakelite polyethylene has lasted hours longer in the air under the same conditions.

formerly owned by R. J. Lovvorn were auctioned Jan. 1 for $311,940 to help pay a $1,106,298 federal tax bill. Hugh Hardin, of Forsyth, bought the mill property and machinery for $190,000. Finished goods and goods in process of manufacture were purchased by the Mayfair Distributing Co. of Columbus, Ga., for $31,200. American Associates, Inc., Atlanta, Ga., bought a quantity of yarn for $13,200 and the Sidney Gilbert Co. of Charlotte, N. C., paid $34,600 for another lot of yarn. The mill produces cordage and at normal capacity employs about 125 persons. It has been closed since the government levied on the property in October.

NEW YORK, N. Y.—Celanese Corp. of America has re-oriented its woven fabric manufacturing operations resulting in a reduction of weaving, dyeing and finishing productive capacity and permitting a greater concentration on the creation and development of new markets and new uses for acetate fibers, either alone or in blends with other chemical or natural yarns, Harold Blancke, president, declared Jan. 10. The statement supplemented a company announcement at Cumberland, Md., disclosing that the dyeing and finishing plant is to discontinue operations this Summer. Such activities, which have been a subsidiary operation to the major function of acetate fiber production at Cumberland since 1925, will be consolidated into the integrated dyeing and finishing plant at Hopewell, Va., which possesses newer and more modern equipment. "We have reached the conclusion that we should not maintain our fabric manufacturing and processing operations on the former large scale," Mr. Blancke said. "The present curtailed volume of woven fabric production by the company," he added, "is believed to be adequate to take care of the requirements of long-established customers. Therefore, it is no longer necessary nor de-

BELDING CORTICELLI EXECUTIVES DEDICATE NEW PLANT—F. L. Johnson, president of Belding Corticelli, telephones dedication message for broadcasting by Radio Station WHKP, Hendersonville, N. C., as part of ceremonies Dec. 3 commemorating opening of the company's "Nymoville" plant in that city. H. A. Johnston, executive vice-president, sits by prior to sending personal message which officially started this two million dollar thread manufacturing plant producing.

The plant, which is constructed of selected brick and insulated aluminum panel walls, will not reach full-scale production until midyear. Production flow and quality will be controlled by approximately 5,000 electronic tubes, making "Nymoville" the first thread manufacturing plant to employ such an electronic control system.

sirable to exceed the original objective which was and still is the creation and commercial development of fabrics containing a high proportion of acetate fiber."

WINSTON-SALEM, N. C. — Washington Mills Co. next Spring will occupy a new plant which is now under construction near Dobson, N. C. The plant is being constructed by the Dobson Realty Co. and will be leased to the textile concern, which will manufacture men's and boys' lightweight underwear, employing several hundred persons.

HICKORY, N. C.—The building of Shuford Hosiery Mills, Inc., on Highland Avenue here has been acquired by Shuford Mills, Inc., and will be utilized by the new owners as a new location for its offices.

GREENSBORO, N. C. — To simplify the corporate structure, four wholly-owned subsidiaries of Cone Mills Corp. have been merged with the parent company. They are Minneola Mfg. Co. of Gibsonville, N. C., Eno Cotton Mill of Hillsboro, N. C., Salisbury (N. C.) Cotton Mill and Cliffside (N. C.) Mills.

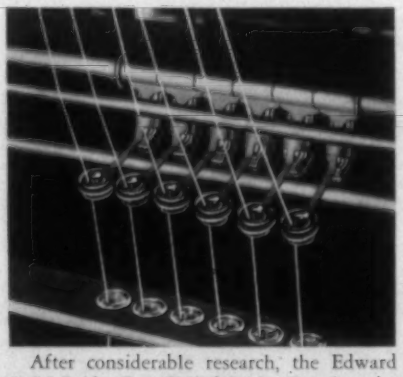
WELLFORD, S. C.—Additional space for the clerical, auditing and executive staffs of Jackson Mills will be provided in a $30,000 addition to the plant's office soon to be constructed. . . . The Alfred Moore Foundation, planned to promote educational and other undertakings chiefly among families of employees, has been established by Jackson Mills. The foundation is named in honor of the late president and treasurer of the plant, who died in 1940.

TROY, N. C.—Smitherman Cotton Mill, Troy's principal industry, has been purchased by the Marcia Corp. of Charlotte, N. C. The purchase price was not disclosed. The plant utilizes 15,226 spindles and 504 looms in the production of flannels and crinkled bed spreads, but the new owners state that at least some of the equipment will be converted to production of print cloths.

For the Textile Industry's Use

EQUIPMENT — SUPPLIES — SERVICES — LITERATURE

New Electric Stop Motion



After considerable research, the Edward J. McBride Co., Philadelphia, Pa., has developed a positive acting electric stop motion. According to a recent announcement made by the company, this new hermetically sealed mercury stop motion will eliminate all the previous annoyances connected with drop wire type electro magnetic stop motions.

One of the main troubles encountered with conventional stop motions is the failure to make positive contact when oil or lint in even relatively small quantities had accumulated on the contact bars. Thus, when an end broke and the wire dropped, any failure to make contact resulted in the warper continuing in operation causing an end to be lost. High-speed warping equipment and magazine creels represent a major investment, the full speed and efficiency of which often cannot be realized due to faulty stop motions. If stop motions fail to act, the consequent lost ends mean reduced warp value, seconds and rejects—plus unnecessary downtime in both warping and weaving. If warpers must be operated at reduced speeds, the full advantage of modern equipment is lost.

The new McBride drop wire has attached to it an hermetically sealed mercury tube containing two contacts. The tube is airtight so that it is impossible for dust, oil, grease or any other outside contamination to prevent positive action of the stop motion mechanism. Sparking which sometimes occurs with conventional drop wire type stop actions is impossible with the sealed mercury unit. Any possibility of fire is therefore eliminated, it is claimed.

A good example of this is the great efficiency, long life and fool-proof operation that is built into the automatic thermostat control of heating units and other thermal devices. Built on similar principals, this new McBride stop motion is set to provide fast and positive action under all conditions. It is not affected by humidity, temperature, excessive lint or oil in the stock. The new McBride stop motion is now available not only on all new McBride magazine creels but also in specially designed replacement units for use on any creel. Modification is reported to be done easily and quickly at low cost.

Liquid Stainless Steel

Slip-On, Inc., announces availability of liquid stainless steel, a protective coating consisting of actual stainless steel reduced by a new process to a microscopically fine form (flakes) and combined with vinyl plastics to form a quick drying liquid that will give a surface of actual stainless steel in coating form to protect against rust and corrosion. Metals, wood, composition board, concrete and brick can be given much of the permanence of the metal itself. It offers impermeability to moisture, of type 18/8 No. 302 stainless steel, in an easy to apply form.

The metal is present in the form of flakes which overlap and interlock as the coating dries, presenting an almost continuous barrier of stainless steel to corrosive materials. It can be sprayed, brushed or dipped. Neither the resin binder nor the stainless steel changes appreciably with age. The coating is in the bluish gray, non-shiny cast of stainless steel. It is tack free in five minutes or less, quick drying and may also be baked. It has been thoroughly tested both in the field and by testing agencies. For complete information write to Slip-On, Inc., 401 Broadway, New York 13, N. Y.

Moore Appointed Agent

William J. Moore, manufacturers' agent of Greenville, S. C., recently was appointed Southern agent for the Pfahler-Cleland Co. of Galion, Ohio, manufacturer of stainless steel tanks, hoppers, pans, trucks, vats and other items. Mr. Moore also represents Edward H. Best & Co., Boston; Redman Card Clothing Co., Andover, Mass.; Chapman Electric Neutralizer Co., Portland, Me.; Waukesha (Wis.) Foundry Co.; and Chas. A. Schieren Belting Co., New York.

Improved Dye House Shoe

A new wooden sole shoe, especially designed by Stahmer Shoe Co., Davenport, Iowa, protects textile worker's feet from water, chemicals and acids prevalent in dye house and other wet process departments. This shoe has proven satisfactory under severe and complete tests, the firm claims.

Stahmer's dye house shoes have a 1½-inch thick close-grain sanded maple sole that protects the worker's feet. For comfort and ease in walking the sole is shaped to fit the foot and covered with a soft cushion inner lining. Stahmer's patented copper

FOR THE TEXTILE INDUSTRY'S USE—

wire process securely fastens the sole to the heavy leather tops. Double stitching and rivets at the points of strain reinforce the sturdy uppers. A pearl gray suede gusset or tongue keeps out dust, dirt and liquids.

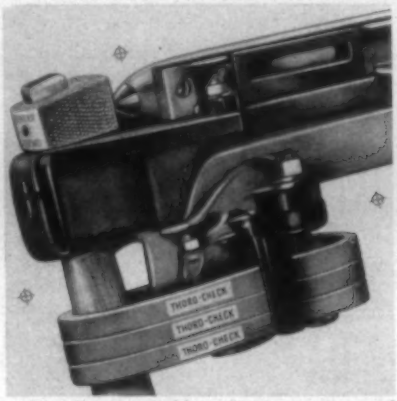
The Stahmer dye room shoe provides a long-needed protection to the textile worker. Wooden soles wear longer than leather, are less costly than leather and can't be damaged by water, chemicals or acids. The shoe also prevents many foot diseases, staining and poisoning, it is pointed out. Stahmer dye room shoes are sold direct to the textile manufacturers who either distribute or re-sell the shoes to their employees. The shoes are available in sizes five to 12. Larger sizes available on special order. A free catalog will be sent on request.

Appointed Southern Agent

Watson & Desmond, Charlotte, N. C., with offices in Greensboro, N. C., and Greenville, S. C., have been appointed exclusive Southern representatives for the New England Paper Tube Co., Pawtucket, R. I., manufacturer of dye tubes, parallel tubes and other paper products. Watson & Desmond will also handle the Adolff dye tubes in the South.

Watson & Desmond also has been made exclusive Southern representative for the Dana S. Courtney Co., Chicopee, Mass., manufacturer of wood tubes and cones, filling, warp and roving bobbins. Watson & Desmond have represented Courtney in Georgia, Alabama, Louisiana and Mississippi for several years but now will cover the entire Southern territory for them.

Dayton Thoro-Check



The Dayton Rubber Co. has announced a new check strap for weave rooms known as the Thoro-Check, scientifically designed to provide properly cushioned snubbing action while giving maximum protection to shuttle, binder, picker, and picker stick. Dayton, which manufactures the famous Dayco cot, Dayco long draft apron, Dayton Thorobred pickers and straps, said that one year's tests in actual weave rooms had shown the new Thoro-Check outlasted other check straps by between 25 and 50 per cent.

Principal advantages cited for the new

Thoro-Check were the following: greater picker and shuttle life; protection of binder and picker stick; rubberized fabric construction without elongation; smoother checking providing carefree operation; unaffected by temperature and humidity; individual or multiple replacement; and famous Dayton precision construction.

Dayton officials state that the new Thoro-Check is available for immediate delivery in sizes and types for all looms. Further details can be obtained from the Dayton Rubber Co., Dayton 1, Ohio.

Manhattan FHP V-Belts

New improved Manhattan single-groove V-belts are described in a new bulletin issued by Raybestos-Manhattan, Inc., Manhattan Rubber Division, Passaic, N. J. Copies may be obtained by requesting Bulletin 6830 B. According to the manufacturer, Manhattan FHP belts embody an advanced design with straight sidewalls for more grip and with cords in the strength member held in a straight "power line" by a special "truss ply" of finely woven duck under the top cover. This is said to increase the life of the belt and the machine it drives by eliminating vibration. New standardized belt numbers and a list of standard sizes of belts are included in the bulletin.

VACUUM IMPREGNATION OF STARCH into carpet cops is being carried out here in this chamber manufactured by F. J. Stokes Machine Co. of 5500 Tabor Road, Philadelphia, Pa.

Plastic Band-Aid

Feminine plant workers frequently incur the risk of serious infection rather than report to the first-aid station for treatment of minor hurts, because they feel that a protective dressing will be more unsightly than the hurt, particularly when soiled. The new Band-Aid plastic strips (strips of plastic adhesive tape with a small pad of absorbent gauze in the center) take care of this situation. Their flesh color makes them inconspicuous and their smooth plastic surface sheds dirt and grease. On hand wounds, the dressings can be washed along with the hands. Waterproof, they don't get loose or soggy when wet. Because they are thin and elastic, they stay put on finger joints and other hard-to-bandage places without binding, permitting the most deli-

cate operations to be performed with normal dexterity. They come individually wrapped and completely sterile. The maker is Johnson & Johnson.

Trico Reference Folder

A new, colorful, quick reference folder, Series F.L.B. 300-C, describing Trico electrical and lubricating products, is announced by Trico Fuse Mfg. Co., 2948 N. Fifth Street, Milwaukee 12, Wis. The folder briefly describes merits of Trico powder-packed renewable, one-time and plug fuses, fuse pullers, Kliplok clamps for fuse clips, and Kliplok test clamps and lubricating devices. The lubricating devices are segregated into a handy wall chart showing various types and sizes, together with suggestions for proper selection and application. Photographs of actual installations are shown. A free copy of the folder may be obtained on request to the company.

Rust Preventative Paint

An improved formula of its Certified Rust Inhibitor No. 425 is announced by United Laboratories, Inc., of Cleveland, Ohio. Outstanding features of this new rust preventative paint are that it will dry in ten minutes under normal drying conditions and one coat provides excellent hiding of the old metal surface. This latter feature will reduce painting costs up to 50 per cent, it is claimed. The new formula, known as Rust Inhibitor No. FD-425, will withstand temperatures from minus 100° F. to plus 250° F. and is exceptionally resistant to salt air and fumes. It may be applied over damp surfaces, interior or exterior, galvanized metal and new or rusted metal surfaces of all kinds. The one-coat, fast-drying process leaves an attractive, semi-gloss finish and is available in several colors plus aluminum and clear. Further information will be supplied upon request to United Laboratories, Inc., Cleveland 12, Ohio.

Sant' Andrea System

Officiana Meccanica Sant' Andrea, Novara, Italy, has published an illustrated booklet describing its recently developed Sant' Andrea System for the processing of long staple synthetic and chemical fibers. This booklet will be supplied to interested parties through Sant' Andrea's U. S. A. agent, Ernest L. Frankl Associates, 22 East 40th St., New York 16, N. Y.

Mico Fiber Microtome

The Mico fiber microtome is the subject of a four-page bulletin being distributed by Mico Instrument Co., 80 Trowbridge Street, Cambridge, Mass. According to the bulletin, the Mico fiber microtome makes possible rapid preparation of very thin sections

NEW HOMOGENIZING PUMP — Russell Gill of the Southern Sizing Co. demonstrates the new Hydropulse homogenizing pump made by the Pioneer Division of Scott & Williams, Inc., to Miss Alberta Shukis of the Graver Water Conditioning Co. at the 23rd Exposition of Chemical Industries held recently in Grand Central Palace. The Hydropulse is unique in that the processed fluid is completely isolated from the actuating mechanism and comes in contact only with the rubber pulsators, stainless steel, and the nylon ball valves. Southern Sizing Co. is the sales representative for the Pioneer Division in the Southern textile industry.

for those who study fibers, threads, yarns, plant stems, films, paper and similar small things for laboratory and commercial analysis where speed and accuracy are of importance. It is used to identify fiber content in mixtures of yarn. The instrument is available in two models: Cat. No. 200 designed for fibrous or circular material and engineered with a .031-inch aperture; and Cat. No. 201 designed for film, paper or similar flat material and furnished with an aperture .125-inch long by .015-inch wide.

American Rieter Co.

The Swiss firm of Joh. Jacob Rieter & Co., Ltd., textile machinery manufacturer in Winterthur, Switzerland, since 1795 has established a company in New Jersey under the name of American Rieter Co., Inc. This new corporation began its business activities at 577 Kearny Ave., in Arlington, N. J., on Jan. 2, 1952.

The purpose of this enterprise is the promotion of sales of Rieter's spinning machinery in the United States and Canada; to give prompt and efficient service to its customers; to maintain sufficient stock of spare and repair parts, and to cultivate the pleasant relationship with Rieter's many business friends over here.

For the time being the new company is not planning to build machinery in this country. Expert engineering facilities and services are available and the firm is looking forward to inquiries concerning its complete line of textile machinery for cotton, wool, worsted and synthetics.

Mount Hope Service Plan

Prompt service at reasonable cost are features of the new service plan announced by Mount Hope Machinery Co. Mount Hope devices for handling cloth, paper and plastic are designed to give long service with minimum maintenance. While the company's guiders, expanders and units with rubber-covered rolls require special service after long periods of operation, many units require only periodic cleaning, greasing and oiling. For servicing all units, the Mount Hope Service Department is maintained with a complete stock of repair parts and special tools and machines. Service Department personnel specializes in repair and adjustment of Mount Hope products.

Mount Hope equipment scheduled for servicing, according to the company's new service bulletin, is to be shipped to the Taunton, Mass., plant for the purpose. Details of service provided and the cost involved are stated in the bulletin, which Mount Hope Machinery Co. is currently distributing to the trade.

Greenville (S. C.) Belting Co. has been appointed exclusive representative in North Carolina, South Carolina, Georgia, Alabama and Tennessee for Tatem Mfg. Co. of Eastford, Conn., manufacturer of handles and picker sticks. Representatives of Greenville Belting Co. will present the Wear Ever, Air Sealed and Pickrite brand picker sticks which have been made famous by Tatem.

Serving The Textile Industry

Bahan Textile Machinery Co.

ABOUT 1922, William H. Bahan came South as traveling representative of the *Wool & Cotton Reporter* of Boston, Mass., following his brother, George Bahan, who a few years earlier had located at Charlotte, N. C., as the Southern representative of a New England manufacturer of shuttles and bobbins.

In making his rounds William Bahan ran across J. O. Corn, who had invented and patented the Corn rocker bearing for looms. J. O. Corn was later general superintendent of the Pacific Mills at Columbia, S. C., and president of the Southern Textile Association. For about a year before he retired he was general superintendent of the Carolinian Mills at High Shoals, N. C.

William Bahan decided to purchase the patents of the Corn rocker bearing from J. O. Corn and he also purchased, from George R. Plott of Concord, N. C., patents rights to a bobbin supporter which Plott had invented.

These were the very modest beginnings for one of the most successful textile machinery enterprises which the South has witnessed.

At first William Bahan had both devices manufactured for him and was content to do the selling only, but as the business grew he opened a small manufacturing plant at Union, S. C., and purchased his castings from Ohio.

Emslie Nicholson, president of the Monarch and Ottaray Mills, was also president of a bank at Union and had such confidence in William Bahan that his bank made the loan which made it possible to establish the plant in Union.

However, in 1927, a fire destroyed the manufacturing plant and William Bahan went back to having others manufacture the loom devices and repair parts which he sold.

In order to be more centrally located he opened an office on Main Street in Greenville, S. C.

In 1933 his only son, Edward F. Bahan, *(pictured at left)* who had attended both Notre Dame University and Furman University and majored in mathematics, joined the organization and became an active factor in the business.

When it appeared, in 1938, that there might be a second World War, William Bahan and his son Edward held a conference and decided that if war came they might find it difficult to secure enough high quality castings to carry on their business of manufacturing loom parts which had then reached a very large volume and was still growing rapidly.

They bought a substantial size tract of land just outside the city limits of Greenville and built a foundry with about 40,000 square feet of space.

It was a wise move because it enabled them to carry on their business during World War II, and immediately after the war they began the purchase of machine tools which were especially adapted to the manufacture of their products, which have always been almost entirely limited to parts for bobbin change looms.

W. H. Bahan *(above)* died in 1949, and responsibility fell upon the shoulders of his son, Edward Bahan, who has done exceptionally well, for the plant has been expanded and the volume of business doubled since 1949.

Many years ago, I worked for some time in a foundry at Ithaca, N. Y., but it was nothing like the foundry which I saw at the Bahan Textile Machinery Co. which I visited on Jan. 14.

I saw there an immense and well lighted

room with every mechanized feature which could be installed in a foundry.

Sand for the molds came from overhead instead of having to be lifted from the floor and the packing and jogging was done mechanically.

In the foundry in which I once worked we would complete a long line of molds by hand and then a pot with moulten metal would be carried down the line by hand and the molds filled, one at a time.

In the foundry at the Bahan Textile Machinery Co. the molds travel on conveyors and as each comes to the right spot, they are filled with molten metal and weights placed on them.

The molds continued to travel on the conveyor in a circle until they reach a point just back of the point at which the weights were put on.

There the weights are taken off and the worker desiring to put a weight on a new mold has only to turn and pick it up.

The side of the molds are knocked off just where they will be needed for new molds and the conveyor carries the sand and the casting inside to a place where the sand is knocked off on a conveyor belt and is carried overhead so as to be dropped in the molds again when needed.

I doubt that there is a more efficient foundry anywhere or one in which there is less lost motion.

In a room are kept the plates which form the sides of the molds. These plates are of aluminum and very expensive to make and frequently a plate costs several hundred dollars. Some of the large ones cost almost $1,000 and there is a lot of money tied up in that plate room.

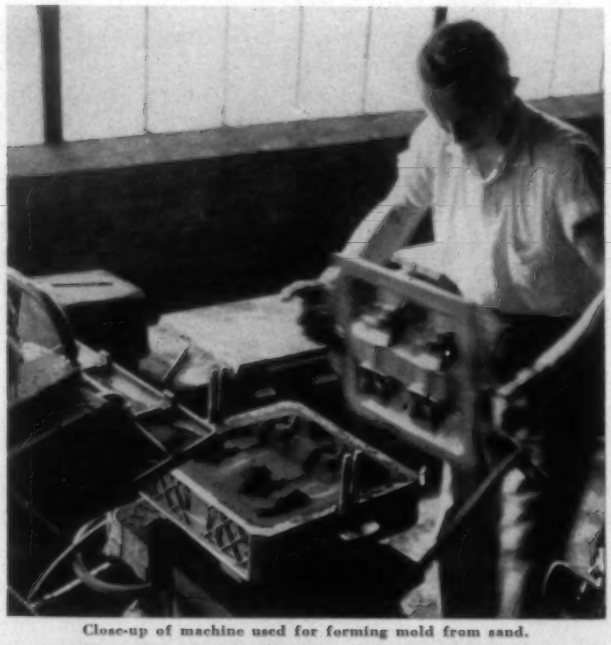
Although the foundry is very large and is the most important part of their business, because good castings go a long way to make good loom parts, it was by no means all, for the Bahan Textile Machinery Co. now have 160,000 square feet of floor space and much of it is occupied with modern and highly specialized machine tools, most of which have been purchased since the close of World War II.

While the manufacture of loom parts for bobbin change looms is the major part of the business of Bahan Textile Machinery Co., they also rebuild looms and build a loom of their own known as the Bahan Loom.

They are now rebuilding 200 looms for a mill in western North Carolina and a batch of them were on the floor.

While it is impossible to describe all the machines and processes, I left the Bahan Textile Machinery Co. fully convinced that the business was being well and efficiently operated under young Edward F. Bahan, who took over the helm when his father, the founder, William H. Bahan, passed on.

William H. Bahan came South to secure subscriptions for a New England textile journal and the immense manufacturing establishment which is now operating at Greenville, S. C., is a rare story of success based upon ability and intelligence.



Close-up of machine used for forming mold from sand.

Continuous line rolls by while men pack sand into molds.

At *left* is shake-out machine which separates sand from casting and makes it available again for use in molds. Castings at *right* are ready for grinding.

Worker placing completed sand molds on track, thus readying them for molten iron, while in the foreground molds already poured roll by for cooling off.

Sidney Cone Heads Finishers Association

Sidney M. Cone, Jr., secretary and treasurer of Cone Finishing Co., Greensboro, N. C., was elevated from vice-president to president of the National Association of Finishers of Textile Fabrics at the 38th annual meeting of the association recently in New York City. Mr. Cone succeeds Arthur G. Poor of Standard Bleachery & Printing Co., Carlton Hill, N. J., who becomes chairman of the executive committee. H. M. Burke, general manager of the Dutchess Bleachery, of Lockwood-Dutchess, Inc., Wappingers Falls, N. Y., was elected vice-president of the association to succeed Mr. Cone. Walter R. Howell of Bradford (R. I.) Dyeing Association continues as vice-president and Miss Alice C. Moore association secretary, as treasurer.

A decline of six per cent in the total yardage finished in 1951 by members of the association, as compared with the previous year, was reported by Miss Moore. This covers white, colors, blacks and prints as reported by the same companies for the two years. At the same time, data were issued for the first time this year on the quantities of gray bales and cases of finished goods held in finishing plants.

"Estimated figures indicate that at the end of 1951 there was an approximate increase of eight per cent in gray bales and nine per cent in cases of finished goods on hand, compared with the end of 1950," the report stated.

The color classification service of the association continued in volume use, Miss Moore reported, with 18,593 classifications made during the year. This was a 14 per cent drop from the 1950 level, it was noted, but still 369 per cent ahead of 1943. Vat colors represented 75 per cent of the classifications made, the report continued, of which 38 per cent were in classes one and two, and the largest number in class one.

Mr. Poor in his report as retiring president, noted the streamlining of the committee structure of the association during the year and thanked all those who had co-operated to make the association's work successful. He reported the action of the executive committee in granting a two-year leave of absence to Miss Moore and expressed the hope that she could return before then.

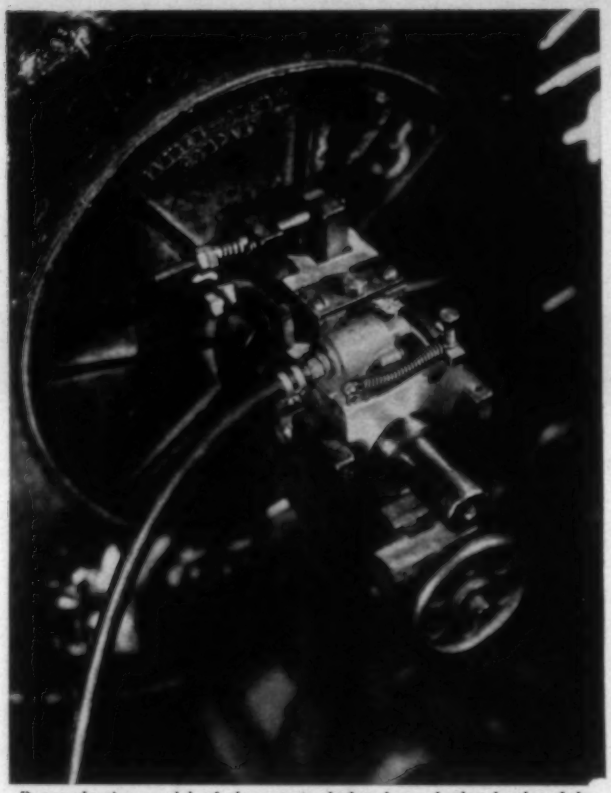
Elected members of the executive committee to serve three-year terms ending in January, 1955, were: Former chairman, G. D. Harrison, Lewiston (Me.) Division, Pepperell Mfg. Co.; T. A. Adams, U. S. Finishing Co., Norwich, Conn.; W. R. MacIntyre, Jos. Bancroft & Sons Co., Wilmington, Del., and G. E. Sinkinson, Sayles Finishing Plants, Saylesville, R. I.

Novel Beam Brake For Cotton Slasher Creel

It has been decided to release for industry-wide distribution a novel beam brake for cotton slasher creels which has recently been developed by Deering Milliken Research Trust. The new device, of which a prototype test model is pictured herewith, provides improved yarn tension control and effectively minimizes run-out waste. It has been redesigned and engineered by Cocker Machine & Foundry Co. of Gastonia, N. C., for mass production and is now available.

Extensive tests of these brakes have been run at one of the cotton mills in the Deering, Milliken group, and it has been found that the use of the brakes virtually eliminates the expensive run-out waste which usually results from uncertain tension control. The new device replaces the primitive rope and weight arrangement currently used in most slasher creel operations and does so without going into the elaboration and expense of independently driving each beam in the creel. The desirable performance characteristics have been obtained by providing for each beam a simple yet mechanically sound and reliable brake and needle bearing assembly. A compact air cylinder holds out of operation a spring which operates the brake, allowing the beams to turn and the yarn to run smoothly from them with a minimum of tension while the slasher is up to speed. A solenoid-operated air valve is employed to exhaust the cylinder when the slasher is stopped or slowed to creep speed, thereby bringing the spring into operation and applying a braking torque. The mechanism incorporates means for "fail-safe" operation in order to insure against yarn waste or machine down time in the event of failure of either the power or air supply.

It is a significant feature of the new development that the brake is adapted to provide two levels of tension. While the beam set and slasher are running at normal speeds, a minimum of tension is maintained on the yarns. When the operator is required to stop or to slow down the slasher, sufficient additional braking its automatically applied to decelerate the revolving beams and to keep them from over running. When the slasher control lever is shifted to allow the slasher to resume normal running speed, the braking torque is automatically reduced and the yarn again runs in the desirable low tension condition. This automatic addition and removal of supplemental braking torque is applied evenly and simultaneously at all beams and permits the yarn tension to be at all times uniform from beam to beam. This is a major factor in making all of the beams in the set run out at practically the same time so that excessive waste on the back beams can be eliminated.



Pre-production model of the cotton slasher beam brake developed by the Deering Milliken Research Trust and being produced by Cocker Machine & Foundry Co.

Aside from the intangible savings obtained through better

yarn tension control, analyses of savings realized in decreased yarn waste alone show that the cost of equipping a creel with the new brakes can be paid for in less than two years' operation. Patent applications covering the new development are pending in the United States Patent Office.

Alabama Mfrs. To Meet At Biloxi

The Buena Vista Hotel at Biloxi, Miss., will be the scene April 3-5 for the annual meeting of the Alabama Cotton Manufacturers Association. Dwight M. Wilhelm of Montgomery, Ala., executive vice-president of the association, is taking hotel reservations. The complete program for the event will be announced later.

Members of the association will be entertained at a welcoming party on the opening day of the event, sponsored by associate members and suppliers. This event will get under way at 6 p.m.

Piedmont A.A.T.C.C. Unit To Meet Feb. 1-2

The Piedmont Section of the American Association of Textile Chemists and Colorists will hold its Winter meeting Feb. 1-2 at the Robert E. Lee Hotel in Winston-Salem, N. C. Clarence Hooper of Burlington Mills Corp., Burlington, N. C., is in charge of arrangements for the meeting and members have been notified that hotel reservations for the event should be made direct with the hotel.

The meeting of the unit's research committee will be presided over by Dr. Harley Y. Jennings of Dan River Mills, Danville, Va., chairman. Discussions will be on resin catalysts, anti-statics, tear testing, stream pollution and other subjects of pertinent interest.

Speakers scheduled to be heard at the technical session include D. H. Marnon of General Dyestuff Corp. who will discuss the Marhen process relating to control of vat dyeing, and Duncan Carmichael of Tennessee Eastman Corp. who will consider the newer developments in dyeing of cellulose acetate yarns.

Herman Cone of Cone Mills Corp., Greensboro, N. C., will be guest speaker at the banquet concluding the meeting.

Texan Succeeds Texan As Maid Of Cotton

A striking and personable Texan, Patricia Ann Mullarkey, became the 1952 Maid of Cotton Jan. 3, and immediately started preparing for a tour scheduled to cover 64,000 miles in this country and abroad. The sparkling, dark-eyed Miss Mullarkey was chosen from 18 other pretty finalists to be the cotton industry's ambassadress of good will for 1952. The 14th Maid of Cotton to be selected, she succeeds Jeannine Holland, Houston, the 1951 Maid.

A native of Dallas, the new Maid is a 20-year-old brunette and is currently a student at Southern Methodist University, where she is majoring in home economics. Her parents, who accompanied her to the contest, are Mr. and Mrs. James M. Mullarkey. Mr. Mullarkey is the Dallas representative for Reeves Bros., textile manufacturing company.

Named as first alternate to Miss Mullarkey was Lucianne

Patricia Ann Mullarkey, 1952 Maid of Cotton, is photographed at a luncheon given in her honor by Reeves Bros., Inc., in New York City Jan 15. Miss Mullarkey is cutting a three-tiered cake inscribed "To The Loveliest Maid of Cotton, Patricia Ann Mullarkey, From Her Many Friends at Reeves Brothers." The 1952 Maid is wearing a suit styled from Reeves fabric, and her father is J. M. Mullarkey, Reeves representative at Dallas, Tex.

Knight, Austin, Texas, a 20-year-old student at the University of Texas. Second alternate Betty Carol Goosmann, Bells, Tenn., is a junior at the University of Tennessee. Catherine Bailey, Anniston, Ala., and Allyn Smith, Los Angeles, were also among the top five finalists.

The third Texan to be selected as Maid of Cotton, Miss Mullarkey was chosen after two days of careful and intensive screening by a panel of judges featuring some of the nation's outstanding fashion and sales promotion representatives, headed by panel chairman Estelle Lane, fashion editor of *McCall's* magazine.

Presentation of a streamlined new Ford convertible to the Maid was another contest highlight. The sleek blue car will be delivered at the close of her six-month tour. It is awarded by Memphis, Tenn., district Ford dealers in recognition of the close association of the cotton in automotive industries.

Itinerary for the Maid of Cotton includes visits to over 30 major cities from coast to coast, in addition to a brief but busy European jaunt and an airborne June tour of major South American countries, via Braniff's El Conquistador flight.

The Maid, accompanied by Catherine Williams and Lillian Sledge, tour manager and tour secretary, arrived in New York Jan. 7 to begin preparations for her tour. She will be outfitted with a specially-designed high-fashion, all-purpose wardrobe and will appear on various television and radio shows. She will also pose for a series of fashion photographs to be used in tour publicity. The tour officially opens in Miami early in February and is sponsored by the National Cotton Council, the Memphis Cotton Carnival and the Cotton Exchanges of Memphis, New York and New Orleans.

Textile Technologists Re-elect All Officers

All officers of the American Association of Textile Technologists were re-elected for one-year terms Jan. 9 at a meeting of the group in New York City. The re-elected officers are: George H. Hotte of A. M. Tenney Associates, Inc., president; Walter E. Scholer, American Viscose Corp., first vice-president; Erb N. Ditton, Gotham Hosiery Co., Inc., second vice-president; Bernice M. Bronner, secretary, and Olen F. Marks, Industrial Rayon Corp., treasurer.

New members of the board of governors, elected for a three-year term, are: Cameron A. Baker, U. S. Testing Co., Inc., Hoboken, N. J.; George L. Baxter, Bradford Dyeing

Association; and Larus R. Burgess, Cone Export & Commission Co., Inc. Retiring members of the board are: Richard T. Kropf, Belding Heminway Co., Inc., and Ephraim Freedman, R. H. Macy & Co., Inc. Mr. Baxter was re-elected. He had served but one year on the board.

Board members who have two years yet to serve are: Bert J. Bertelsen, Botany Mills, Inc., Passaic, N. J.; Charles H. Ochsner, Burlington Mills Corp., and Gerard K. Lake, Pepperell Mfg. Co. Those with one year remaining of their term are: Miss Irene Blunt of the National Federation of Textiles; William A. Newell of *Textile World*, and Leonard S. Little, consultant.

New members were elected to the auditing committee. These are: Marie A. Falcone, Good Housekeeping Institute; Bernard Gutmann, Robbins Mills, Inc., and Dexter Stevens, Jr., Wellington Sears Co.

The association has been invited to tour the facilities of Bachmann Uxbridge Worsted Corp., Uxbridge, Mass., and the new research laboratory at Whitin Machine Works, Whitinsville, Mass., Mr. Hotte disclosed in his year-end report. In addition, A.A.T.T. has discontinued its practice of offering a prize for an outstanding paper from textile students, he said. In the future an annual award in the form of a plaque will be made to one senior student at each of the ten accredited textile schools.

Cotton Research Clinic Slated Feb. 13-15

Efficient processing of cotton will be the theme of the 1952 Cotton Research Clinic to be held in Pinehurst, N. C., Feb. 13-15. The annual meeting is sponsored by the National Cotton Council. "Today more than ever the maximum utility must be derived from our fiber resources to cope with shortages of men and machinery," M. Earl Heard, vice-president and director of research of West Point (Ga.) Mfg. Co. and chairman of the clinic advisory committee, declared. "Research can help us achieve that goal."

The program for the 1952 meeting outlines five sessions covering major aspects of cotton processing. The opening session contains four papers dealing with new cotton varieties and their performance in processing and in fabrics. A special report giving the first authoritative information on the "tar spots" which have troubled the industry for the past several years is also included in the session.

Two panel discussions are featured at the research clinic. The first is on the applications and limitations of new scientific methods for testing the value of cotton fibers. The second is on a subject which represents a radical departure in mill processing—that of applying chemicals to cotton to improve its spinnability and add new properties such as increased strength.

In other sessions of the clinic the most recent progress in important research projects will be described. The "off the record" discussions of the meeting by research experts of the industry are expected to stimulate new and impor-

tant improvements in the processing of the world's major textile fiber.

In addition to Mr. Heard, members of the advisory committee are: Dr. Hugh Brown, dean of textiles, Clemson College; J. B. Goldberg, director of research, J. P. Stevens Co.; Dr. Milton Harris, president, Harris Research Laboratories; V. B. Holland, director of research, Cannon Mills; Walter Regnery, president, Joanna Cotton Mills Co.; Dr. Walter M. Scott, assistant chief, Bureau of Agriculture and Industrial Chemistry, United States Department of Agriculture; Dr. R. Y. Winters, assistant administrator, Agriculture Research Administrator, United States Department of Agriculture; and Dr. Leonard Smith and George Buck of the National Cotton Council.

Management Institute Cites Textile Firms

Eight companies in the textile industry have been awarded Certificates of Management Excellence for the year 1951 by the American Institute of Management, New York, a non-profit foundation devoted to the study and improvement of corporate organization and management.

Cited for the first time by A.I.M. were Pepperell Mfg. Co., Boston, Mass., and West Point (Ga) Mfg. Co., while the following were designated "excellently managed" for the second time since the annual award was initiated two years ago; American Viscose Corp., Philadelphia; Anderson, Clayton & Co., Houston; Cannon Mills Co., Kannapolis, N. C.; Celanese Corp. of America, New York; Industrial Rayon Corp., Cleveland, and Marshall Field & Co., Chicago.

According to Jackson Martindell, president of the institute, only 298 firms in the United States and Canada were deemed eligible to receive the awards.

In deciding which companies are entitled to the designation, Mr. Martindell explained, credits are given for excellence in ten spearate fields: economic function, corporate structure, health of earnings growth, fairness to stockholders, research and development, directorate analysis, fiscal policies, production efficiency, sales vigor and executive evaluation. In order to be certified by the institute, a company must receive 7,500 points out of a possible 10,000. The point system used by the organization is based on a continuing comparative study of 3,000 concerns.

"It is heartening to note," the institute official declared, "that 70 more firms are receiving awards this year than did a year ago. This proves that companies are tightening up on their methods and procedures and improving their relations with employees, stockholders and the public. We expect this trend to continue, with more and more managements receiving awards each year.

"One of the major purposes of these awards," Mr. Martindell continued, "is to encourage management in all lines of business to give due weight to all ten factors, rather than being especially strong in one or two and neglecting the others. A Certificate of Management Excellence proves that the company receiving it has attained a proper balance in its efforts and objectives."

Meeting Dates Set By S.T.A. Board

During a meeting held at Charlotte, N. C., Jan. 12, the board of governors of the Southern Textile Association made

further plans for the organization's annual convention and set dates for four divisional meetings this Spring.

Room reservations at the Ocean Forest Hotel at Myrtle Beach, S. C., where the convention will be held June 12-13-14, will this year be secured by using printed reservation blanks sent out by the S.T.A. office. The first group of blanks, for regular (mill men) members of the association, will go out Jan. 31, and for a period of one month following date of this mailing, the mill managers, superintendents and overseers will have an exclusive opportunity to secure their rooms. At the conclusion of this first period, on Feb. 29 a second group of blanks will go to the S. T. A. associate (traveling men) members, and they in turn will have a similar one-month period to secure accommodations in the convention hotel. Thereupon, all remaining rooms will be available to anyone wishing to attend the convention. This priority system was set up last year at the suggestion of the associate members division.

Tentative plans call for holding the following divisional meetings this Spring: Eastern North Carolina Division March 8 at Raleigh, N. C.; South Carolina Division March 29 at Spartanburg, S. C.; Northern North Carolina-Virginia Division April 19 at a site to be determined; and Piedmont Division May 3 at Belmont, N. C.

Present at the board meeting were Chairman T. I. Stafford of Clifton, S. C., President J. L. Delany of Joanna, S. C., Vice-President D. A. Purcell of Draper, N. C., Executive Secretary A. R. Marley of Erwin, N. C., Secretary-treasurer J. T. McAden, Jr., of Charlotte; board members J. C. Godfrey of Calhoun Falls, S. C., Walter Vincent of Danville, Va., J. L. James of Cooleemee, N. C., E. C. Horner of Coleridge, N. C., H. C. Estes of Rhodhiss, N. C., J. B. Powell of Lockhart, S. C.; past presidents J. O Thomas of Spray, N. C., Marshall Dilling of Gastonia, N. C., Smith Crow of Lexington, N. C.; G. R. Ward of High Point, N. C., chairman of the Northern North Carolina-Virginia Division; J. A. Chapman, Jr., of Enoree, S. C., chairman of the South Carolina Division; John Reed of Charlotte, chairman of the Associate Members executive committee; and David Clark, editor of TEXTILE BULLETIN.

Offer Courses In Cotton Fiber Testing

Opening dates for courses in cotton fiber testing during the coming year were announced recently by the American Cotton Manufacturers Institute. The classes are held at the institute's division of technical service at Clemson, S. C. Courses for 1952 have been tentatively scheduled as follows: Jan. 7, March 17, May 19, Aug. 4, Oct. 20.

This service to cotton mills was initiated by the Cotton-Textile Institute and became an important activity of the American Cotton Manufacturers Institute upon its formation in 1949. Since its founding the division has trained fiber technicians for mills representing over 35 per cent of the American cotton industry. It also does service fiber testing for mills on a fee basis.

The courses are of eight weeks' duration and are conducted by John T. Wigington, director, and Mrs. Helen G. Beasley, laboratory technician. Trainees are taught to operate the Micronaire for measuring fiber fineness; the Presley

machine for measuring fiber strength; and the Fibrograph and Suter-Webb sorter for measuring fiber length and length uniformity.

Complete information concerning the training program may be obtained from Mrs. Helen G. Beasley, Division of Technical Service, American Cotton Manufacturers Institute, Box 151, Clemson, S. C.

R. L. Stowe, Sr., Author Of New Book

R. L. Stowe, Sr., of Belmont, N. C., referred to by many as the dean of North Carolina's textile manufacturers, has turned author. Mr. Stowe, 84, and in textile manufacturing 50 years, is the author of a recently-published 61-page volume entitled *Early History of Belmont and Gaston County, North Carolina.* As must be expected from one so closely identified with the growth of the area over a long period of years, the book is partly an autobiography and the story goes back to Mr. Stowe's boyhood and is full of pleasant reminiscences.

Mr. Stowe started working on the book several years ago. He wrote most of the chapters in longhand, and dictated a few to his secretary. He completed the book last December. Mr. Stowe organized his first textile plant, Chronicle Mills, in 1901. It was named after Maj. William Chronicle, hero of the Battle of Kings Mountain, who lived near the site. The mill is still running regularly.

New Markets Linked To Fiber Research

New markets for cotton and wool may be developed as a result of research studies under way in natural and synthetic fibers, Dr. John H. Dillon, director, Textile Research Institute, Princeton, N. J., predicted recently. Speaking at the first 1952 meeting of the Synthetic Organic Chemical Manufacturers Association, he told more than 150 executives that current textile problems were actually a "rainbow of opportunity" for the chemical industry.

From recently completed basic studies in wool, suggestions have been obtained for major improvements in wool processing and wool fabric quality, he said in a review of progress in both natural and synthetic fibers. He stressed that there were as many opportunities for the chemical industry in the improvement of wool and cotton fibers as in the synthetic materials.

Dr. Dillon predicted that the production of silk would continue in limited quantities unless silk interests put more money into research. Such expenditures, he added, must be made in a hurry. He praised studies of Prof. Masami Oku and Prof. Eugene Pacsu at Princeton University for silk research studies completed recently, but pointed out that the economic variables of availability and price were still dominant in this fiber.

Celanese Corp. of America has established graduate fellowships in advanced scientific research at four leading textile colleges, George Schneider, senior vice-president, announced recently.

Two fellowships will be created by the corporation at Lowell (Mass.) Textile Institute Research Foundation and one each at North Carolina State College, Raleigh, N. C., Clemson College, Clemson, S. C., and Georgia Institute of Technology, Atlanta.

Synthetic Broad Woven Summary For 1950

Production of rayon broad woven goods in 1950 totaled 2,406,000,000 linear yards, the greatest annual production ever reported, it is revealed in the synthetic broad woven goods summary for 1950 recently released by the Bureau of the Census, Department of Commerce. The yardage was 23 per cent above the 1949 production and ten per cent over that of 1948, the second highest annual production. Nylon fabric production continued to climb, reaching a total of 110,000,000 linear yards in 1950, an increase of 19 per cent over 1949, and more than three times the 1948 figure.

According to the report there was a total of 123,000 looms of all types in place Dec. 30, 1950, and aggregate loom hours during the year amounted to 674,089,000. By type of loom the totals were: plain, 29,658 looms in place Dec. 30, 1950, operated 164,230,000 hours; dobby, 49,623 and 301,827,000; box, 40,660 and 197,172,000; jacquard, 3,754 and 10,860,000.

Synthetics Discussed At Alumni Conclave

Synthetic fibers and textile research provided the theme for most of the speakers at the second annual conclave of Textile School Alumni of North Carolina State College, held Dec. 7-8 at the school in Raleigh, N. C. The registration for the event was composed mainly of post-war graduates.

David B. Hardin of the planning board, textile fibers division, E. I. Du Pont de Nemours & Co., Inc., Wilmington, Del., told the gathering that while the problem of dyeing Dacron polyester fiber had not been solved, the firm was pleased with results obtained lately. In tests, exceptionally good pastel and "very good" dark shades have been dyed, but the medium-shade range must be worked on, he said.

He urged evaluation of the new man-made fibers and told his listeners to think of them in terms of end-use performance. "Perhaps you will come to the conclusion that still different characteristics are needed. Tell us about it."

Mr. Hardin traced the history of man-made fibers and went into a detailed account of the properties of the new synthetics. "The big opportunity for the application of ingenuity and initiative lies in the utilization of the functional properties of the various man-made fibers, in combination with each other or with the natural fibers. I am talking now of engineered fibers producing engineered fabrics to do an engineered job."

Prof. R. C. Davis of the textile school suggested a biologi-

cal or low-powered binocular type microscope for mills wishing a single microscope for quality control work. For pure research, the electron, polarizing or phase contrast models were recommended.

Speaking on the "textiles under the microscope," Professor Davis mentioned some projects undertaken for mills: Fiber stripping from yarn on a winder, believed to be caused from too much tension, was found to be immature fiber; brown slubs embedded in yarn in a nylon tablecloth were identified by microscopy as cotton neps; a fabric purchased by a consumer as all wool was found to contain about five per cent wool, the remainder viscose rayon; cotton seed particles were discovered as causing brown spots in a circular-knit cloth. A "completely new" research development in the past year, Professor Davis noted, was the two-phase microscope, capable of 26 million times magnification.

Since 1929 textile research and testing has become increasingly specialized, Dr. Herbert F. Schiefer, acting director of research at the school, stressed. Tools, techniques and methods have been developed for studying effects of chemical treatments on individual fibers, he mentioned.

Changes in external surfaces and of ultra-thin cross-sections of individual fibers are routinely observed by electron and phase-contrast microscopes. A technique has been developed for observing and photographing dyeing action on individual fibers in dye solutions of varying dyeing conditions, under an instrument called a microdyeoscope, said Dr. Schiefer.

It is disconcerting, however, to note that there are not enough young men and women being trained in the various scientific fields to meet the growing demand for scientific textile research personnel, Dr. Schiefer emphasized. In part, he reminded, textile schools have not trained students for scientific research.

Prof. John F. Bogdan, member of an E.C.A. mission inspecting the cotton textile industry in Germany a few weeks ago, pointed out that about 74 per cent of German looms were non-automatic. There are more than 60 loom builders in that country, he said.

The delegates to the second alumni conclave in the School of Textiles at North Carolina State College heard experts describe the magic qualities of the new man-made fibers during their gathering on Dec. 7 and 8. Here David B. Hardin of Wilmington, Del. *(extreme right)*, an official of the planning division of E. I. du Pont de Nemours & Co., demonstrates the wrinkle resistance of a Dacron tie by dipping it in water as the speakers who appeared on the alumni conclave program look on. Seated are William H. Harriss of New York *(left)*, and an official of Cluett, Peabody & Co., and Dr. Herbert F. Schiefer, acting director of research in the school of textiles. Standing, *(left to right:* Prof. John F. Bogdan and Prof. R. C. Davis of the school faculty; Lieut. William H. Payne of Washington, D. C., technical adviser to the officer in charge of the clothing unit of the U. S. Marine Corps; Dean Malcolm E. Campbell of the School of Textiles at North Carolina State College; and Mr. Hardin. *(Photo by B. W. Batchelor.)*

"The German textile industry took a good licking, but they have made a remarkable recovery in six years," he told the group. Production is now back to the pre-war level and they are getting their equipment in good shape, he said. According to Professor Bogdan, the Germans went out and scraped up the pieces after the war, put them together, and started to producing goods.

"The Germans are proud of their machinery," he said. They keep it clean and in good repair. However, he said, most of their equipment is old. As an example, less than one-fourth of their looms are automatic. Use of their old equipment, he commented, makes labor requirements high. Professor Bogdan said women are being trained to work in the factories. In fact, he said, the industry is very dependent upon female labor.

An analysis of fabric shrinkage and stability in rayons and woolens and the stabilizing processes involved were presented to the group by William H. Harriss of the Sanforized division of Cluett, Peabody & Co., Inc.

Following the success of compressive shrinkage in cotton textiles and when the use of rayon fabrics began to become more and more widespread, consumers soon demanded some method of shrinkage control on these cloths, Mr. Harriss pointed out. It was soon discovered that the mechanical compressive shrinkage principle couldn't be applied to rayons too well owing to the nature of synthetic yarns. At first, the fabrics were given a chemical resin impregnation for stabilization to arrest progression and then shrunk on machines. This entailed two operations and was bound not to be too practical.

The tendency of some resinated fabrics for chlorine retention now posed a problem, he said. This was overcome by treating the viscose fiber with chemical compounds, instead of adding impregnated weight for stability. This reduced its propensity to absorb water and caused the fibers to swell, resulting in rayon fabric shrinkage.

Mr. Harriss also traced the development of stabilizing processes for woolen fabric. He said all three processes necessitated precise and expert knowledge as well as efficient management. This is one of the jobs of the North Carolina State School of Textiles. Namely, to equip and train personnel for these tasks, he told the group.

There is a definite place for the newer fibers in textiles and the inherent functional qualities of these newer synthetic blends give a better fabric for the Marine Corps and lend themselves to its end-item use, it was stressed by First Lieut. William H. Payne, U.S.M.C.

"Perhaps the largest single type of fabric used by the Marine Corps during the Winter season is our 16-ounce kersey material. The material is used for the enlisted Winter service uniform. In our wool conservation program, the Marine Corps set a minimum of 15 per cent substitution of synthetic fibers in our 16-ounce kersey material," Lieutenant Payne noted.

Controls Protested As Causing Depression

America's third largest industry, reporting that it "is suffering from the killing blight of deflation," Jan. 17 lodged formal protest with Mobilization Director Charles E. Wilson that "'the continuation or extension of price control measures is completely unnecessary."

The cotton textile industry, in a letter to the mobiliza-

tion director from the American Cotton Manufacturers Institute, charged that since the activation of price control it "has been tobogganed by sharply declining prices, widespread unemployment, the severest drop in earnings of any major American industry and, through loss of employees to other jobs, possible impairment of its capacity to meet future emergency defense needs."

The letter, signed by Charles C. Hertwig, president of the institute, whose membership embraces 85 per cent of the industry, was accompanied by a factual statement of the acute depressed conditions in the industry. Mr. Hertwig's letter pointed out that although the industry's prices have been far below ceilings for months, "it has not been spared from the devestating uncertainties, confusion and business deterrents spawned under price control administration," which are described as having "impeded management, prevented normal operations and suffocated sales which are the life blood of any industry."

The accompanying statement of fact quotes language from the Defense Production Act as basis for a comparison with specific conditions in the industry which it charges are directly contrary to the intent of Congress.

The statement points out that, as defined in the Defense Production Act, the intent of Congress in setting up price and wage stabilization was "to prevent inflation; protect consumers, wage earners, and investors from undue impairment of their living standards; prevent economic disturbances; prevent a future collapse of values."

Contrasted with these purposes, the statement lists depressed conditions in five specified areas. As to inflation, the statement reports "the industry demonstrated its capacity to meet any needs by reaching in the first quarter of 1951 an all-time record rate in production," and that "prices have been depressed more than 26 per cent since last March." As to the protection of the living standards of wage earners, the statement reveals that "in the last ten months, in the entire textile mill industry, the number of unemployed production workers reached a total of 135,000," and that "if the work week had not been shortened to spread unemployment, the number of unemployed would have been vastly larger."

Investors have also suffered. The statement reports that "from the second quarter of 1951 to the third quarter, textile mill products industry's profits after taxes dropped 54 per cent."

Noting that "controls have sometimes been referred to as 'a necessary evil,'" the industry statement adds, "when

'a necessary evil' is no longer necessary, it is only evil," and concludes with the formal protest of the A.C.M.I. board: "Therefore, after careful consideration of the intent of Congress and in light of actual conditions in our industry, we assert that the continuation or extension of price control measures for this industry is completely unnecessary."

Combed Cotton Sales Yarn Output Increases

Output of combed cotton sales yarn was reported Jan. 4 by the National Production Authority, U. S. Department of Commerce, totalled 158,760,503 pounds in the first six months of 1951, a rate which exceeded World War II production. This high poundage indicates sufficient capacity in the industry to provide for all foreseeable civilian and military requirements, N.P.A. officials said.

Combed cotton yarn falls into two categories: "sales yarn," produced for sale to mills which now use it mainly for machine knitting, and "yarn made for own use" which is predominately weaving yarn made up into fabrics by the mills producing the yarn. Combed cotton yarn production of 118 mills making sales yarn only, and of 109 mills making "own-use yarn" (including 21 which produce both for own use and for sale) was reported to N.P.A. as:

	1950 (12 Months)	1951 (First Six Months)
Sales yarn	264,256,697	158,760,503
Own-use yarn	243,913,810	143,508,194
	508,170,507	302,268,697

Though the rate of 1951 output of combed cotton sales yarn tops the 1943 reported figure of 264,557,000 pounds and the estimated 1942 peak of 282,243,000 pounds, production of the different types of sales yarns varied considerably between 1943 and 1950-51 practices, as shown by the following table:

	1943 Made for Sale	1950 Made for Sale	1950 Made for Own Use	1951 Made for Sale	1951 Made for Own Use
	Pct.	Pct.	Pct.	Pct.	Pct.
Weaving yarns	50.75	17.36	88.72	25.65	89.78
Knitting yarns	36.82	59.57	6.70	51.55	5.87
Thread yarns	10.73	20.25	3.43	19.68	3.37
Other yarns	1.70	2.82	1.15	3.12	.98

A breakdown of the sales yarn production by end uses shows:

	1950 (Pounds) 12 Months	1951 (Pounds) 6 Months
Single weaving yarn	13,959,670	11,852,668
Two-ply weaving yarn	27,254,751	24,465,687
Other ply weaving yarn	4,636,771	4,415,659
Single knitting yarn	97,604,987	51,824,608
Ply knitting yarn	59,811,185	30,014,238
Thread yarn	53,521,513	31,249,680
Other yarn	7,467,820	4,937,963

Shipments of sales yarn, including those made on defense-

rated orders, for the first six months of 1951 was reported as follows:

	Total Shipments (Pounds)	Shipments on DO Ratings (Pounds)	Percentage of Shipments on Rated Orders
Single weaving yarn	11,041,958	4,373,131	39.60
Two-ply weaving yarn	23,735,423	8,009,795	33.74
Other ply weaving yarn	4,389,851	486,104	11.07
Single knitting yarn	50,385,717	2,047,066	4.06
Ply knitting yarn	27,891,263	1,226,084	4.40
Thread yarn	30,497,955	1,963,049	6.41
Other yarn	4,865,920	178,819	3.67
	152,808,092	18,284,048	11.97%

A breakdown by end uses of combed cotton own-use yarn reveals:

	1950 (Pounds) 12 Months	1951 (Pounds) 6 Months
Single weaving yarn	191,228,255	110,524,704
Two-ply weaving yarn	24,205,941	17,508,303
Other ply weaving yarn	947,304	812,994
Single knitting yarn	14,174,618	7,070,470
Ply knitting yarn	2,169,925	1,359,543
Thread yarn	8,381,387	4,827,309
Other yarn	2,806,380	1,404,871
	243,913,810	143,508,194

Total machinery in place at the end of 1950 and on June 30, 1951, and the average hours operated by machinery in place per week during each period (calculations made on a basis of 52 weeks in 1950 and 26 weeks in 1951) were:

	1950		1951	
	Number in Place	Av. Hours Per Week	Number in Place	Av Hours Per Week
Combers	6,147	98	6,086	107
Spinning spindles	6,618,749	93	6,713,258	102
Twister spindles	1,245,090	92	1,264,837	102

Analyzing machine hours by shifts, N.P.A. said it appears that much of the equipment in place was idle, even on the first shift, with more being idle on the second and third shifts. Using the first shift as an indicator, the reports show:

	1950 First Shift		1951 First Shift	
	Active	Idle	Active	Idle
Combers	5,867	280	5,822	264
Spinning spindles	6,052,469	566,280	6,176,016	537,242
Twister spindles	1,061,194	183,896	1,108,550	156,287

Spinning spindles in place on June 30, 1951, amounting to a total of 6,713,258, were divided between strictly sales yarn mills, own-use mills and combined mills, and the average hours per week operated by each group, as follows:

	No. of Mills	Spinning Spindles	Av. Hrs. Per Week
Sales yarn mills	118	2,268,546	117.0
Own use mills	88	3,463,253	98.6
Combined mills	21	981,459	80.3
	227	6,713,258	102.2

N.P.A. pointed out that these figures are preliminary. Final figures will be published later by the Bureau of the Census.

SOUTHERN SOURCES OF SUPPLY for Equipment, Parts, Material, Service

Following are the addresses of Southern plants, warehouses, offices, and representatives of manufacturers of textile equipment and supplies who advertise regularly in TEXTILE BULLETIN. We realize that operating executives are frequently in urgent need of information, service, equipment, parts and materials, and believe this guide will prove of real value to our subscribers.

ALDRICH MACHINE WORKS, Greenwood, S. C. Carolina Reprs.: W. D. Wornall and B. Gales McClintock, Box 1524, Charlotte 1, N. C.; Georgia and Alabama Repr.: Ben R. Morris, Box 221, Brookhaven, Ga.; Repr. for Air Conditioning and Humidifying Equipment: J. E. Brown, Box 1318, Atlanta 1, Ga.

ALLEN BEAM CO., 156 River Rd., New Bedford, Mass. Sou. Repr.: Joseph Bowler, Jr., 107 McGee St., Tel. 3-3289, Greenville, S. C.

AMERCOAT CORP., 4809 Firestone Blvd., South Gate, Calif. Carolinas Repr.: Southern Specialties Co., 202 Coddington Bldg., Charlotte 2, N. C.

AMERICAN ANILINE PRODUCTS, INC., 50 Union Square, New York 3, N. Y.: Works at Lock Haven, Pa.; Sou. Warehouse and Laboratory: 1500 Hutchison Ave., Charlotte, N. C.; Warehouse and Laboratory, 4001 Rossville Blvd., Chattanooga, Tenn. Sou. Reprs.: J. H. Orr, Mgr., Charlotte, N. C.; George R. Howard, Charlotte, N. C.; Gayle Rogers, Charlotte, N. C.; W. D. Livingston, Greensboro, N. C.; Marion West, Jr., High Point, N. C.; C. O. Starnes, Rome, Ga.; J. T. Bohannon, Jr., and R. W. Freeze, Chattanooga, Tenn.

AMERICAN CYANAMID CO., Industrial Chemicals Div., 30 Rockefeller Plaza, New York City. Sou. Office, Manufacturing Plant and Warehouse, 333 Wilkinson Blvd., Charlotte, N. C. Hugh Puckett, Sou. Dist. Mgr. Reprs.: John D. Hunter, R. S. Meade, Q. M. Rhodes, Charlotte Office; Eugene J. Adams, P. O. Box 2228, South Highland Station, Birmingham, Ala.; W. C. Comer, Jr., Greenville, S. C.; Jack B. Button, 1409 Garland Drive, Greensboro, N. C.; C. B. Suttle, Jr., P. O. Box 4817, Atlanta, Ga.; A. R. Skelton, Jr., American Cyanamid Co., Mobile, Ala.

AMERICAN MOISTENING CO., Providence, R. I. Sou. Plants, Charlotte, N. C. and Atlanta, Ga.

AMERICAN VISCOSE CORP., 350 Fifth Ave., New York City. Sou. Office, 221 S. Church St., Charlotte, N. C., Henry K. Kelly, Mgr.

ANHEUSER-BUSCH, INC., St. Louis, Mo. S. E. Sales Mgr. Corn Products Dept., Charles H. Conner, Jr., 607 Johnston Bldg., Charlotte 2, N. C.

ARMSTRONG CORK CO., 33 Norwood Place, Greenville, S. C. J. V. Ashley, Dist. Mgr., Tel. Greenville 3-5302.

ASHWORTH BROS., INC., Fall River, Mass. Sou. Sales and Service Office and Repair Shop, 1201 S. Graham St., Charlotte, N. C., J. M. Reed, Sou. Mgr., T. F. Hart, Sales; Mfg. Plant, Sales Office and Repair Shop, Laurens Rd., Greenville, S. C., A. E. Johnson, Jr., Mgr.; Sales Office and Repair Shop, 357 Forrest Ave., N.E., Atlanta, Ga., J. E. Seacord, Jr., Mgr.; Texas Repr.: Textile Supply Co., Dallas, Tex.

ATKINSON, HASERICK & CO., 211 Congress St., Boston, Mass. Sou. Office and Warehouse, 1639 W. Morehead St., Charlotte, N. C., Tel. 5-1640. Sou. Agt., F. E. Bozeman.

ATLANTIC CHEMICAL CO., INC., Centredale, R. I. Sou. Office: 1201 South Carolina National Bank Bldg., Greenville, S. C.

ATWOOD DIVISION, Universal Winding Co., P. O. Box 1605, Providence, R. I. Sou. Offices, 819 Johnston Bldg., Charlotte, N. C.; Agent, Frederick Sails, Frank P. Barrie; Atlanta Office, 903 Whitehead Bldg., Agent, J. W. Stribling.

BAHAN TEXTILE MACHINERY CO., Greenville, S. C.

BAHNSON CO., THE, 1001 Marshall St., Winston-Salem, N. C.; 886 Drewery St., Atlanta, Ga.

BARBER-COLMAN CO., Rockford, Ill. Sou. Office, 31 W. McBee Ave., Greenville, S. C., J. H. Spencer, Mgr.

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BRADLEY FLYER & REPAIR CO., 1314 W. Second Ave., Gastonia, N. C.

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CHARLOTTE LEATHER BELTING CO., Charlotte, N. C. Mgr., J. L. Harkey; Sales Reprs.; P. L. Pindell, Charlotte, N. C.; R. L. Swift, No. 3 Sherwood Court Apts., Ridgeland Ave., Greenville, S. C.

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CLINTON FOODS INC. (Corn Processing Div.), Clinton, Iowa. R. C. Rau, Gen. Sales Mgr., Southeastern Div., Clinton Foods Inc., 161 Spring St. Bldg., Room 317, Atlanta 3, Ga., Tel. Walnut 8998; John C. Alderson, Asst. Mgr., Atlanta Office; Boyce L. Estes, Atlanta Office; Grady Gilbert, Box 342, Phone 3192, Concord, N. C.; J. Frank Rogers and E. F. Patterson, 900 Woodside Bldg., Greenville, S. C., Phone 2-8022. Stocks carried at Carolina Transfer & Storage Co., Charlotte, N. C.; Forrest Abbott Co., 117 E. Court St., Greenville, S. C.; Atlanta Service Warehouse, Atlanta, Ga.; Industrial Chemicals, Roanoke Rapids, N. C.

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DU PONT DE NEMOURS & CO., INC., E. I., Organic Chemicals Dept., Main Office, Wilmington, Del. Sou. District Office: 427 W. Fourth St., Charlotte 2, N. C. R. D. Sloan, Mgr.; J. D. Sandridge, Asst. Mgr.; J. V. Killheiffer, Laboratory Mgr.; W. I. Pickens, Sales Correspondent. Salesmen: L. N. Brown, H. B. Constable, H. H. Field, M. D. Haney, Jr. Technical Demonstrators: J. J. Barnhardt, Jr., Dr. I. F. Chambers, J. T. Hasty, Jr., W. R. Ivey, G. R. Turner, H. F. Rhoads, F. B. Woodworth, N. R. Vieira. The address for all of the above gentlemen is: E. I. du Pont de Nemours & Co., Inc., P. O. Box 1909, Charlotte, N. C. Salesmen: T. R. Johnson, P. O. Box 876, Greenville, S. C.; J. A. Kidd, 1014 Rotary Drive, High Point, N. C.; J. T. McGregor, Jr., P. O. Box 1080, Greensboro, N. C. Atlanta Office: 1206 Spring St., N.E., Phone Hemlock 1904, A. B. Owens, Mgr. Reprs.: W. F. Crayton, Adam Fisher, Jr., J. H. Stradley, P. L. Cowart, J. E. Dempsey, A. C. Sutherland, Jr., A. V. Kerr, J. W. Billingsley, A. R. Williams, Jr., M. S. Williams, Jr., L. A. Burroughs. Chattanooga, Tenn., C. H. Asbury; Knoxville, Tenn., M. S. Morrison, Jr.; Columbus, Ga., A. W. Pickens; Memphis, Tenn.; J. A. Verhage.

EATON & BELL, 904 Johnston Bldg., Charlotte, N. C.; 753 Munsey Bldg., Washington, D. C.

EMMONS LOOM HARNESS CO., Lawrence, Mass. Sou. Plant, 2437 Lucena St., Charlotte, N. C., George A. Field, Mgr.; Arthur W. Harris, Harris Mfg. Co., 443 Stonewall St., S.W., Atlanta, Ga.; W. H. Gibson, 1743 McKinley Ave., San Antonio, Tex.; R. F. "Dick" Coe, P. O. Box 221, Greensboro, N. C.; Ralph Gossett & Co., Greenville, S. C.

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FAIRBANKS CO., THE, 393 Lafayette St., New York 3, N. Y. Factory and District Office: 202 Division St., Rome, Ga. Sou. Reprs.: A. A. Austin, 105 Briercliff Circle, N.E., Atlanta, Ga.; M. A. Chalverus, 815 So. Lee St., Fitzgerald, Ga.; H. M. Sims, P. O. Box 6031, Charlotte, N. C.; H. M. Summerell, 1808 Beverly Dr., Charlotte, N. C. Distributors in all principal cities.

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Before Closing Down

— TEXTILE INDUSTRY HAPPENINGS AS THE MONTH ENDED —

PERSONAL NEWS

C. F. Martin has been appointed Southern sales representative for E. J. Feeley Co., Boston, Mass., manufacturer of dyestuffs and chemicals. The Feeley Co. recently opened a Southern headquarters office at 650 State Street, Charlotte, N. C. For the past ten years Mr. Martin has represented American Aniline Products, Inc.

Fred Nash, former personnel and athletic director at Glendale Mills, Inc., Spartanburg, S. C., has been named superintendent of the Douglasville (Ga.) Division of Glendale, succeeding T. A. McNeil, resigned.

Luther H. Hodges, formerly vice-president in charge of the manufacturing division of Marshall Field & Co., now Fieldcrest Mills, Spray, N. C., has been named "Tri-City Man of the Year for 1951" by the Leaksville-Spray Exchange Club. He was presented a bronze plaque.

Gaylord Davis, vice-president, treasurer and general counsel of American Enka Corp., Enka, N. C., has been elected a member of the board of managers of the Asheville, N. C., branch of Wachovia Bank & Trust Co.

Walter C. Comer, Jr., has been appointed sales representative in the state of South Carolina for the industrial chemicals division of American Cyanamid Co. Mr. Comer is a native of Bennettsville, S. C., and is a graduate of North Carolina State College. Prior to joining Cyanamid, Mr. Comer was with Fairforest Co., Eagle & Phenix Division, Columbus, Ga. He will make his home in Greenville, S. C.

Promotion of R. Carter Henry and Charles L. Tidwell to general managers of divisions in the Dunean group of mills was announced Jan. 23 by R. G. Emery, executive vice-president of J. P. Stevens & Co., Inc. Mr. Henry assumes the duties of general manager of Jonesville (S. C.) Mills and Piedmont (S. C.) Mfg. Co., of which divisions he was formerly manager. Mr. Henry has been with the Dunean group of mills since October, 1938. Mr. Tidwell, who becomes general manager of Dunean Mills and Watts Mills divisions, was formerly assistant general manager of these divisions. Mr. Tidwell came to Dunean Mills in 1941. He was previously associated with Judson Mills and the American Viscose Corp. . . . Announcement was made Jan. 23 by J. Wilbert Wood, vice-president of Stevens, of the promotion of Henry W. Suber to general manager of the Whitmire and Aragon plants of Aragon Baldwin Mills division and the Industrial Cotton Mills division of the Stevens company. The Aragon and Industrial plants are located at Rock Hill, S. C., the Whitmire Plant is located at Whitmire, S. C. Mr. Suber, who has been manager of the Whitmire Plant, and who will continue his residence at Whitmire, has been with the company since his graduation from Clemson College in 1932. . . . Mr. Wood also announced the following additional promotions at the Whitmire Plant: James H. Abrams to manager; Fay E. Alexander to assistant superintendent; Charles B. Grant to general overseer of carding. The promotion of M. Hurt Ramsey to assistant superintendent of the Industrial Plant at Rock Hill was also announced. . . . Effective Feb. 1 the following promotions will be made at the Republic Cotton Mills division of the Stevens company at Great Falls, S. C.: D. M. Pennington, formerly superintendent of Mills Nos. 1 and 2, will be promoted to assistant to the general manager. A. E. Williams, who has been assistant superintendent of Mill No. 1, will be promoted to superintendent of Mill No. 1. Odell Brannon, general overseer on No. 2 weaving, will be promoted to superintendent of Mill No. 2. W. M. Carter, instructor of No. 2 weaving, will be promoted to general overseer of weaving in Mill No. 2.

W. J. Carter of Greensboro, N. C., executive vice-president of J. P. Stevens & Co., Inc., was elected a director of Security Life & Trust Co. recently at the firm's annual stockholders meeting in Winston-Salem, N. C.

Kemp P. Lewis, chairman of the board of Erwin Mills, Inc., has been succeeded as president of the Bank of Harnett at Erwin, N. C., by Ben R. Roberts of Durham, N. C. Mr. Lewis will continue as a director of the bank. . . . E. H. Bost, superintendent of Erwin Mills plants at Erwin, was elected a vice-president of the Bank of Harnett and Carl R. Harris, Erwin vice-president and assistant treasurer, was elected to the board of directors of the bank.

Carl T. Erickson has been appointed assistant vice-president of Commercial Factors Corp. Mr. Erickson is well known in the textile and factoring fields, having started with Peierls, Buhler & Co., Inc., in 1922. This latter company was merged in 1929 with Frederick Vietor & Achelis, Inc., to form the present Commercial Factors Corp. Mr. Erickson will succeed Reinald R. Kaufmann as assistant to George J. Schatz. Mr. Kaufman will join the executive staff of the corporation. Mr. Erickson is a member of the New York Credit Men's Association and treasurer of the Woolen and Worsted Yarn Credit Group.

Murray H. Morse, beginning his 27th year in the textile industry, 22 of them with American Viscose Corp., has been named assistant to the general sales manager of the Chemstrand Corp. Mr. Morse attended New Bedford (Mass.) Textile Institute and was associated with Whitman Mills of New Bedford from 1925 to 1929 before joining American Viscose.

Charles W. McCord has been elected treasurer of Meinhard, Greeff & Co., Inc. Mr. McCord, who joined the company in October, 1949, as assistant treasurer, formerly was with Chemical Bank & Trust Co. for 16 years, being assistant secretary in its Southern territory. . . . Arthur W. Pederson and Harold J. Leedy, both new business representatives for Meinhard, Greeff & Co., have been appointed assistant secretaries.

Roger Milliken, president of Deering, Milliken & Co., Inc., will be the principal speaker at Gainesville, Ga., Feb. 12 at the annual meeting of the Gainesville-Hall County Chamber of Commerce. Deering, Milliken & Co. is the principal stockholder of Pacolet Mfg. Co., which has two mills in Gainesville.

James T. Wardlaw, who recently retired as treasurer of Drayton Mills, Spartanburg, S. C., has been elected to a seven-year term on the board of trustees of the Spartanburg County Foundation. Walter S. Montgomery, president of Spartan Mills, is chairman of the foundation.

Thomas R. Smith, manager of the yarn dyeing department at Wiscassett Mills Co., Albemarle, N. C., recently was named "Senior Man of the Year for 1951" by the Albemarle Junior Chamber of Commerce and was awarded a plaque for distinguished service to his community.

Harry D. Reynolds, for the past ten years with Dun & Bradstreet, Inc., in Richmond, Va., Winston-Salem and Charlotte, N. C., has been appointed credit manager of Southeastern Factors Co. of Charlotte.

Ishmael Maddox has been promoted from assistant card room overseer in the Prince Plant of Waverly Mills, Inc., Laurinburg, N. C., to general overseer of carding in the Waverly Plant. . . . Daniel L. Alford, for the past year superintendent of carding and spinning for Textile Pan Americanos, Medllin, Colombia, South America, has joined Waverly as night overseer of carding at the Waverly Plant. . . . Mark Wright

BEFORE CLOSING DOWN

has been promoted from his card grinding job on the first shift to second shift overseer of carding at the Prince Plant.

Col. Fulton G. Thompson has relieved Col. Henry R. McKenzie as chief of the Q. M. purchasing division at the New York Quartermaster Procurement Agency. Colonel Thompson comes to the agency from the Columbus (Ohio) General Depot where he served as supply officer and, later, executive officer.

L. V. Potter, works manager and a director of Muschamp Taylor, Ltd., Manchester, England, arrived in the United States early this month to visit as many mill installations of Foster-Muschamp equipment as time allows during a limited stay. He is making his headquarters at Foster Machine Co., Westfield, Mass. Purpose of the visit is to confer with Foster officials on the sale of Foster equipment in Europe, where Muschamp Taylor has represented Foster for several years.

C. A. Cannon, president of Cannon Mills Co., Kannapolis, N. C., recently was appointed to serve on a five-member investment advisory committee to the Oscar Johnston Cotton Foundation. The foundation was established by the board of directors of the National Cotton Council in 1948.

Donald J. Eccleston has been appointed general manager of Warwick Chemical Co., a division of Sun Chemical Corp. Mr. Eccleston formerly held the position of manager of the textile chemical division and prior to that was sales manager of Suntone pigment colors for the company. Before joining Warwick, Mr. Eccleston was assistant general manager of Glasgo (Conn.) Finishing Co.

Robert J. Adams, superintendent of the Thomaston Plant of Thomaston (Ga.) Mills, recently completed 37 years with the firm and was presented a handsome engraved gold watch by Julian T. Hightower, executive vice-president.

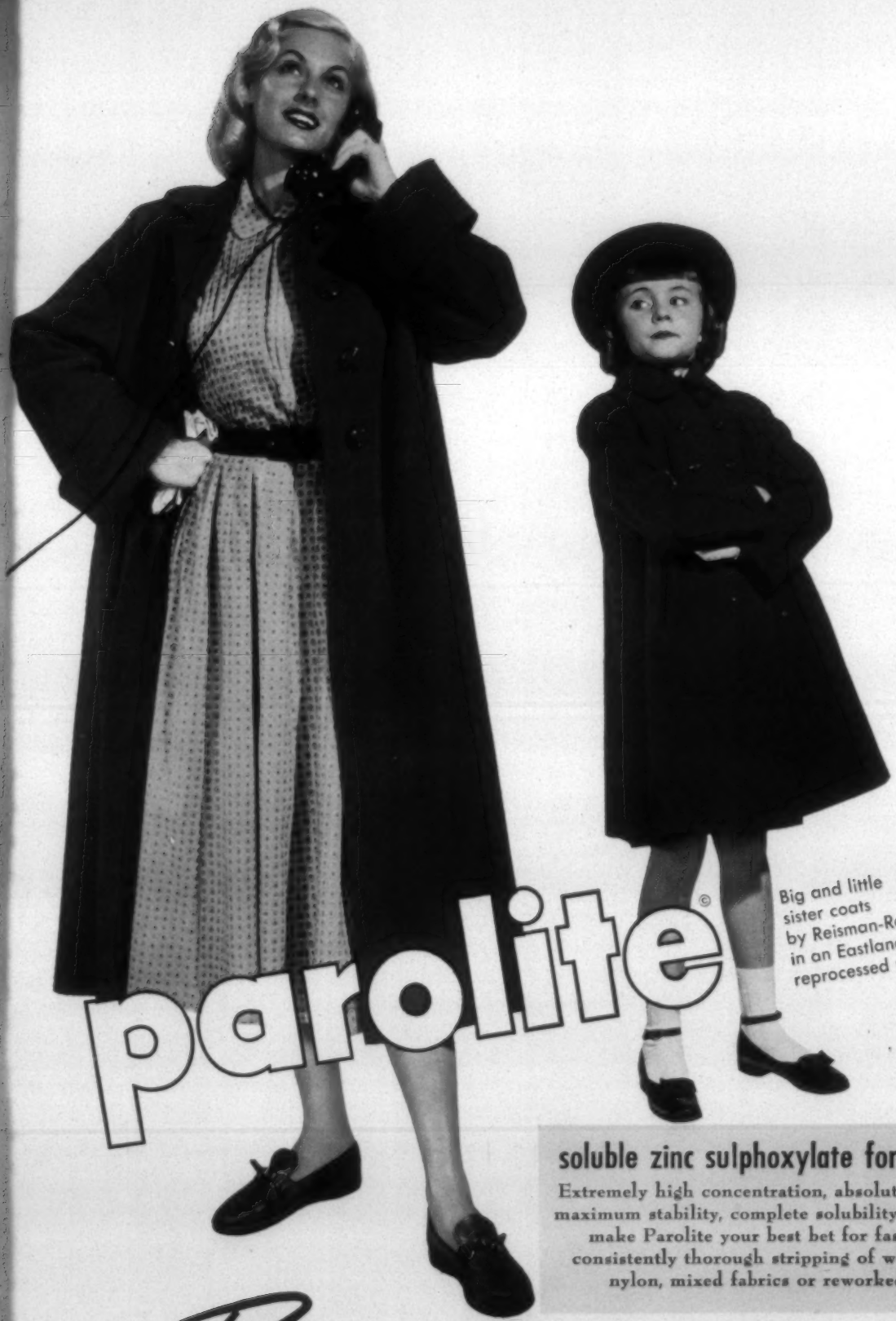
MILL NEWS

UTICA, N. Y.—Stockholders of Utica & Mohawk Cotton Mills, Inc., Jan. 16 voted to sell the firm to J. P. Stevens & Co., Inc. The sale will be accomplished by an exchange of Utica & Mohawk's 260,000 shares of stock for an equal amount of Stevens stock. Ralph T. Marshall, former president of Utica & Mohawk, will continue in charge of manufacturing operations at Utica's two Southern plants, located at Seneca and Clemson, S. C.

LAURENS, S. C. — The new plant of Woonsocket (R. I.) Worsted Co. here is expected to be completed and in operation some time in March.

TRYON, N. C. — Tryon Processing Co. recently acquired all the outstanding capital stock of Moss-Foy Textile Co. of Mount Airy, N. C. Machinery of the Moss-Foy firm, consisting principally of winding and dyeing equipment, is being moved to the Tryon plant.

Index to Advertising



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WETTING AGENTS
Atcopen 2P
Atcopen 2T
Atco Merpene Special

DYEING ASSISTANTS
Atconil 0-20
Atconil DAC-25

ENZYMES
Atcozyme Powder
Atcozyme H Sol.
Atcozyme H Pwd.

SULFONATED OIL & SOFTENERS
Sulf. Tallow
Atcotal
Sulf. Castor Oil
Sulf. Red Oil
Sulf. Soya Bean Oil
Sulf. Peanut Oil
Atco Finishing Oil DR

SYNTHETIC SOFTENERS
Atcosoft SD
Atcosoft RA-25
Atcosoft N
Atco Resin Softener UF

GRAPHITE REMOVERS
Atco Graphite Remover LV
Atco Graphite Remover HV

WEIGHTERS
Atco Weighter #1
Atco Weighter #2
Atco Weighter #250

ANTI-STATIC AGENTS
Atco Anti-Static N-30
Atco Anti-Static X-30

DULLERS
Atco Light Duller
Atco Dark Duller

RESINS
Atco Paste Resin 400
Atco Liquid Resin 150
Atco NS

ANTI-FUMES
Atco OF

STIFFENERS
Atcoperm
Atco Finish 808

WATER REPELLENTS
Atco Water Repellent
Atcodri 33
Atco Water Repellent WM
Atcodri A & B
Atco Mulsion P

SLIP-PROOFING AGENTS
Atco Bindtex R
Atco Slip-Proof N

ANTI-FOAM
Atco Hydrofoam

STRIPPING AGENTS
Atco Liquid Strip

GUMS
Atco Gum Trag
Atco Locust Bean Gum
Atco Vat Gum
Atco Gum Arabic Solution 50%

LACQUERS
Atco Printing Lacquer #667
Atco Lacquer Thinner #667
Metaperm

WATER SOFTENERS
Atco Water Softener

SEQUESTRIENTS
Atcosene CCF

BETTER TEXTILE PROCESSING THROUGH *Better Textile Chemicals*

ATCO PRODUCTS

ATLANTIC CHEMICAL CO., INC.
CENTREDALE, RHODE ISLAND

CANADA: Granby, Quebec NEW JERSEY: W. Paterson